Paper TRADE JOURNAL

JANUARY 6, 1949

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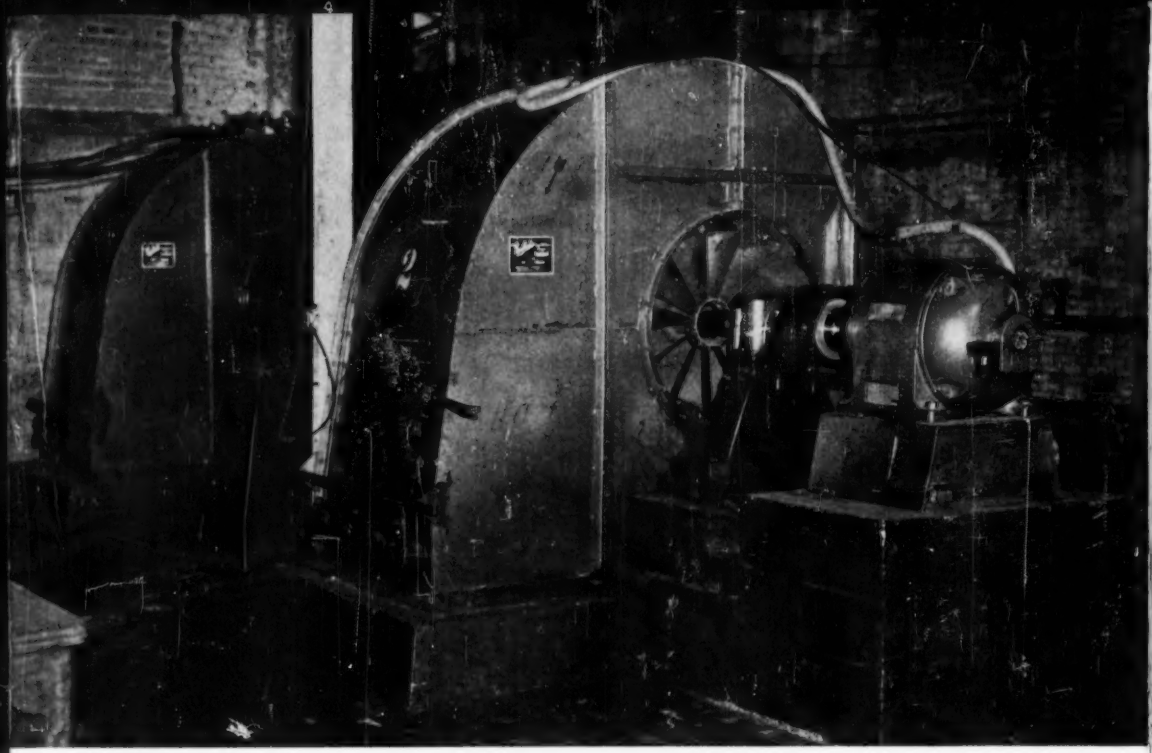

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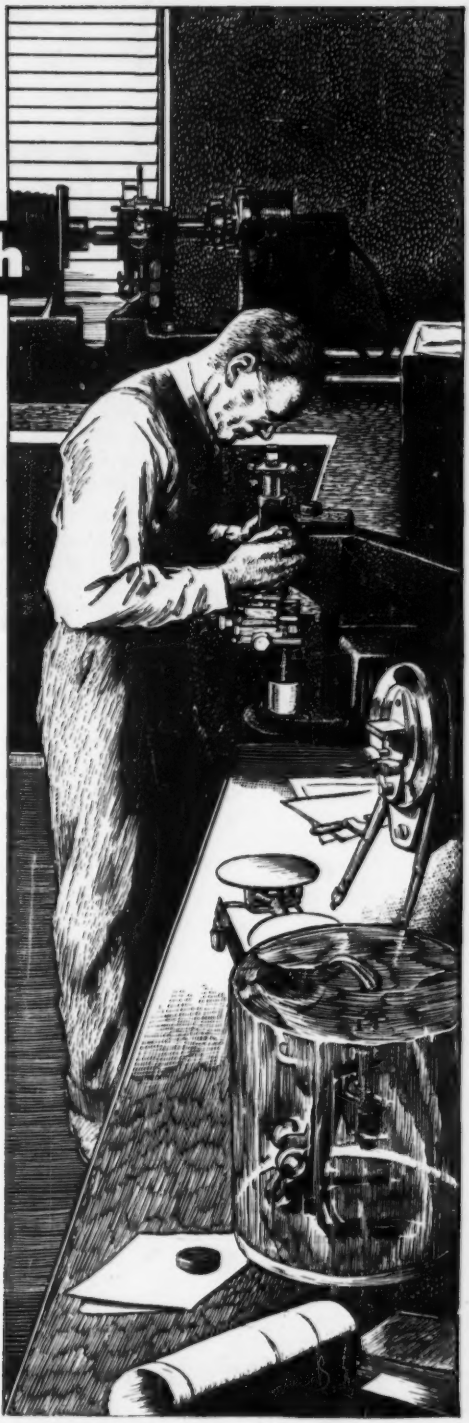

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Paper TRADE JOURNAL

JAN. 6, 1949

VOL. 128, NO. 1

Rail Rate Change Hearings Ahead

By EDWIN CHESTER HASTINGS

Edwin Chester Hastings Traffic Service, Pittsburgh, Pa.

Within the next few weeks there will be public hearings on the proposed changes in the ratings of many paper items. The hearing will be in New York, Chicago, Atlanta, Dallas, Denver, Seattle and San Francisco.

Paper interests should make every effort to attend these meetings for the main reason these new ratings *will increase the cost to ship*. If a reasonable number of paper representatives do not appear to defend the industry, there will be nothing to stop higher ratings from going into effect.

To give a clearer picturer of the reason for these hearings, their purpose, and how they touch the shipping interests of the entire country, the following information is presented:

The classification now used by the rail carriers will be replaced by a new tariff as ordered by the Interstate Commerce Commission. The tariff, when published, is designed to remove some of the evils charged to the present publication, but as to this, only the future will tell — and prophets are sometimes dead wrong.

The tariff now in effect has been issued many times. The first Consolidated Freight Classification was born during the days of World War I, when the rail carriers were under Government administration. It is by no means a masterpiece, nor does it solve the big problem of classification of articles for movement in transit. Condemned by many, yet it is the result of 50 years of work by experienced traffic men. Many faults are charged to the compilers, the chief one being to present a simplified system that a novice can grasp. Regardless of the pro and con, the tariff has to act as the governor until there is a better one to replace it.

To understand the bigness of the coverage of the tariff, it provides ratings for both less-than-carload and carload in 46,465 items that cover the millions of different articles made, sold or resold in America.

To keep these reports simple so that anyone may understand, the terms East, South and West have been used concerning changes in ratings and rates. It may be best to explain these terms mean territories, when applied to rail freight traffic. For example, the East is Official Territory, and this is divided into Central Freight Association, Trunk Line, New England territories; the South is Southern or the Southeastern section; the West is Western Trunk Line, Southwestern, Transcontinental territories. The present classification covers these territories, but the general term Consolidated Freight Classification is used differently in the various territories, such as Official, Illinois, Southern, Western classifications.

The new tariff will be known as the Uniform Classification. Its purpose is to offer one rating that will apply nationally. The present system has three and four ratings, one for each territory or a certain section of the country. These different ratings on an article cause undue preference and prejudice between shippers and traffic. It isn't fair to allow a business in one territory located near a good market to have the advantage of low ratings while another is hindered by higher ratings and longer distance. Both firms should have equalized ratings in order to compete fairly for the same market. The new tariff is designed to help this type and correct the present evils that confront many firms.

The Uniform Classification however, will not be ready until 1950 or later. In preparation for its inception there has been set up a committee composed of men from the present classification territories. This committee offers for the shipper's inspection the proposed new ratings. Public hearings are held, where shippers will have the opportunity to protest or approve. It is important for the paper industry to know there is a united effort needed to secure an equalized objective. Personal representatives should attend the hearings with written evidence. The material of written statements and exhibits should be furnished in *four complete copies* and addressed to the Committee on Uniform Classification.

The evidence presented should be based on facts, each mill knowing its own problems and how these need to be adjusted where ratings that are to be increased will effect costs of transportation and market. Also, how these increases may hinder or ruin future shipments. Comparison should be made with other related items that have lower ratings and some of these not increased but decreased. Proof should

(Continued on page 56)

I.C.C. O-K's Interim Freight Rate Increase

WASHINGTON—*W. P. Bartel, secretary of the Interstate Commerce Commission, released the following statement on December 30:*

"INTERSTATE COMMERCE COMMISSION, WASHINGTON, NOTICE, EX PARTE NO. 168 INCREASED FREIGHT RATES, 1948

December 30, 1948

"The Interstate Commerce Commission today issued its report and order, adopted Wednesday, December 29, with respect to the motion of the railway carriers for an interim increase of eight percent in their freight rates (with certain exceptions and limitations) pending the hearings upon their petition for a nation-wide increase of about 13 percent in their present rates. The Commission sustains the motion to the extent of authorizing certain increases to be made upon five days' notice. The increases allowed, pending the further hearings, are six percent within eastern and southern territories and between those territories, five percent within zone 1 of western trunk-line territory, four percent within western territory other than zone 1 of western trunk-line territory, and five percent on interterritorial movements except those between the eastern and southern territories. These increases, to be superimposed upon the existing rates, are held to maximums of six cents per 100 pounds on fruits, vegetables, and melons, and four cents on sugar and lumber, and articles taking the lumber rates. No increases are permitted on protective services.

Describes New Paper Machine Developments

Left to Right: P. A. Jackson, sales engineer, and E. A. Hodge, vice-president, Pusey & Jones Corp.; Herbert B. Johnston, Allied Paper Mills (Chairman, Michigan Division of the Superintendents Association); and Philip H. Goldsmith, sales and development engineer, Pusey & Jones Corp.

KALAMAZOO—Details of several recent equipment developments for application to board machines, as well as to other types of papermaking machines, were given by Philip H. Goldsmith in an address at the dinner meeting of the Michigan Division of the American Pulp & Paper Mill Superintendents Ass'n., Inc., at Hotel Harris, December 16.

Mr. Goldsmith, sales and development engineer with the Pusey & Jones Corp., Wilmington, Del., stressed particularly the Flow-Spreader, a mechanical arrangement designed to spread out the flow of stock across the entire width of a paper machine; a paper machine dryer not yet in commercial production but undergoing tests in several installations, and a pneumatically-operated press, designated as the Simplex, for board machines.

E. A. Hodge and P. Andrew Jackson, both also with Pusey & Jones, aided Mr. Goldsmith in answering technical questions raised during the discussion period which followed the presentation of the paper.

Herbert B. Johnston of the Allied Paper Mills, and chairman of the Michigan Division of the Superintendents Ass'n., presided at the meeting which drew an attendance of more than 60 members.

Trees-for-American Bonds

NEW YORK—*Paper Trade Journal* on January 3 received the following communication, presented herewith verbatim, in an unsigned statement mailed in an envelope bearing the corner card of Walter S. Clugston, Cambridge City, 19, Ind.

To the PULP & PAPER Manufacturers of America:—

Greeting:—

TREES FOR AMERICA.

Today we are faced with an ever growing shortage of TIMBER.

Government Ownership of timberlands etc. has failed; like all Government works—not because the foresters who do the work have laid down but to usual Government methods.

In order to secure a supply of timber for the future we propose:—

Laws should be developed to allow industry that use wood or timber to form separate corporations to plant trees;—by issuing BONDS;—which will be guaranteed by the STATE;—to buy the land; plant the trees; grow them and allow a sensible period of time for said industry to use the timber as they pay off these bonds.

A group of pulp and papermills could join and develop there timber supply at very small expense, the paying off of these TREES for AMERICA bonds would not hurt—with the right setup; you would simply pay yourselves the market price for timber you use and this would over a period of years pay off the bonds—you would then have a PERPETUAL PULPWOOD supply and you would hardly know how you paid for it.

This will develop a PERPETUAL PULPWOOD SUPPLY for pulp and papermills without endangering their capital structure etc.

STATE should cooperate with said industry and tree development should be under supervision of STATE FORESTRY DEPT. FIRE protection should be the responsibility of the STATE, under STATE POLICE protection.

State will secure return through a stumpage tax, when timber is cut.

A study of our STATES will show hundreds of acres of hilly land unfit for cultivation growing nothing—washing away.

For example the total Federal and State owned land in Ohio and Indiana combined if mature would only supply a good pulp and papermill. What about other grades of paper, wood-working etc.????

Would appreciate your reaction on this.

Cordially,

TREES for AMERICA.
Efficiency Engineers,
Cambridge City, 19, Ind.

Governor Gates of Indiana says;—"You have something."

Mr. Wilcox, Indiana State Forester says;—"Your idea is good."

Mr. S. B. Sutphin, President;—"I am for anything that will give this country needed trees."

Wood Fibre Board Output

TORONTO — Production of rigid insulating board (wood fibre) in Canada showed a sharp increase in November at 19,104,287 square feet compared with 16,151,791 square feet in November 1947. For the first 11 months of the current year production has amounted to 199,585,805 square feet, an increase of some 14,300,000 square feet over output of 185,306,868 square feet for the corresponding period a year ago.

Domestic sales showed an increase from 12,298,261 to 16,489,583 square feet in November and sales for the first eleven months of the year were up 24,000,000 square feet, at 169,090,641 square feet as compared with sales of 145,044,327 square feet in the like period of 1947. Among the manufacturers of rigid insulating board are Building Products, Ltd.; Donnacona Paper Co., Ltd.; and International Fibreboard, Ltd.

Tanglefoot Sells Converting Division

GRAND RAPIDS, Mich.—The Tanglefoot Co. sold its paper converting division to the Grand River Paper Corp. in mid-December.

The Grand River Paper Corp. is a newly-formed Michigan corporation with Jackman Palmatier, former general manager of Tanglefoot, as president.

Other officers, all former Tanglefoot personnel, are Guy H. Linacre, Tanglefoot superintendent for 30 years, vice-president in charge of production; F. A. Mac Lennan, former manager of paper sales for Tanglefoot, vice-president in charge of sales; Miss Kathryn D. Homan, secretary of Tanglefoot, assistant secretary. The new corporation is capitalized at $100,000.

Mr. Palmatier said the paper concern will continue to manufacture Tanglefoot gummed paper products, mainly gummed sealing tape which has a wide industrial use.

Tangle Co., according to Mr. Schermer, will, as before, manufacture insecticides and diffusing equipment on a nationwide and exporting basis.

Schermer said Tanglefoot does not look forward to manufacturing sticky fly paper again, as the demand for the product is small now that various sprays have been placed on the market.

Both companies will operate in separate space in the present Tanglefoot factory at 314 Straight avenue, SW.

Officers of the Tanglefoot Co. in addition to Mr. Schermer are F. L. Colby, vice-president; S. P. Steensma, vice-president; James M. Borrendame, treasurer, and Miss Homan, secretary.

Fuel Costs in the Paper Industry Are Climbing

WASHINGTON—The paper industry in New England and Wisconsin, and contiguous areas, faces five percent higher costs for power in 1949 than in the year just closed, based on preliminary figures now coming into the Federal Power Commission.

These figures, covering power costs of various industries, are expected to be compiled for publication probably about next March.

Increased power costs, to the paper industry as well as others, are said at the Commission to be attributable solely to the rising cost of fuels entering power production. Coal in the New England states is reported to cost generally $8.80 to $9.00 per ton, compared with the national average cost to electric utilities of $8.50.

It is perhaps not generally realized that the paper industry of the United States is exceeded in its use of electric energy only by the chemicals, iron and steel industries. The paper industry uses somewhat more electric energy than the production of non-ferrous metals, such as aluminum, zinc, magnesium and related products.

Figures now coming in from the industry indicate that paper production, closely tied as it is to water power, actually generates two-thirds of its own requirements for electric energy, and thus has to buy only about one-third of its requirements from other sources. The industry is using now, about 12,200,000,000 kwh. of electric power, compared with 9,600,000,000 kwh. in 1939.

Its use of other fuels in 1939 was as follows: anthracite coal, 1,039,000 tons; bituminous coal, 9,195,000 tons; coke, 23,600 tons, fuel oil, 6,696,000 barrels; natural gas, 29,518,000,000 cubic feet; manufactured gas, 219,000,000 cubic feet; mixed gas, 175,000,000 cubic feet; however, electric energy is contributing nowadays, close to 50 percent of the basic energy requirements of the industry.

Due to its high load-factor in energy consumption, Commission returns indicate, the paper industry pays a somewhat lower rate than some other users, around one cent per kwh., perhaps a shade under.

The National Security Resources Board has now issued its second electric power survey report, the first having been completed earlier in 1948. This report reveals that in the interval since the first survey, peak power loads developed which exceeded the estimates of the earlier date, with consequent lowering of margins between capacity and load.

However, there is an optimistic note in that expansion of capacity now under way will result by 1951, in a peak of almost 72,000,000 kilowatts, a 40 percent rise over 1947. While the report does not speculate on a possible emergency demand incident to new war production, it does consider known national defense and foreign aid factors.

Whiting Estate Files Equity Petition

SPRINGFIELD, Mass.—An equity petition brought by the trustees of the Samuel R. Whiting estate to secure Probate Court approval of a transaction under which the estate will acquire the first mortgage on the Collins Mfg. Co., of North Wilbraham from the Union Trust Co., was filed in the Registry of Probate on December 13.

Acquisition of the paper company's machinery and other personal property by New York interests is imminent, according to copies of documents filed with the petition.

Mrs. Margaret Whiting Bast of Springfield and James G. Whiting of Holyoke, trustees under the late Holyoke paper manufacturers' will, are the petitioners and the respondents include other beneficiaries of the trustee estate. The trustees now hold a second mortgage for $184,000 on the Collins plant and physical assets, subject to a first mortgage held by the Union Trust Co., on which the unpaid balance is $429,-105.09.

If the transaction is consummated, the Whiting estate will buy the first mortgage from the bank for $100,000. First, however, the bank has stipulated that the principal must be reduced to $163,105.09.

On November 24, the petition sets forth, the Collins firm ceased operations because of operating losses that occurred after the second mortgage was given to the estate on August 3. It states, further, that the Union Trust Co. has informed all interested parties that it will demand the payment of the principal on the first mortgage in December 1948.

Continuing, the petition declares that Collins, with the bank's consent, entered into an option agreement with Karl Katz of 500 Fifth avenue, New York, to sell certain personal property to Mr. Katz for $225,000, with a supplemental agreement adding an additional $25,000, the total amount to be paid to the Union Trust Co., on the first mortgage. If its mortgage is cut to $163,105.09, the bank will then sell to the Whiting estate for $100,000, the petitioners say.

They also represented in the petition that although considerable time has been spent on the deal, it has proved impossible to sell the Collins property for enough money to satisfy both first and second mortgages, and that if they fail to assent to the two option agreements they face the alternatives of buying the first mortgage to protect the second, or losing he second when the bank forecloses the first.

They, therefore, want the court to approve their assent to the option agreements, to approve the purchase of the first mortgage from the Union Trust Co., so that the trust estate will have a first mortgage on the real property and on the personal property after the Katz purchase, as well as the second mortgage, and to grant the permission to liquidate sufficient assets of the trust estate to buy the first mortgage from the bank and to pay counsel fees.

Under the option agreements, Mr. Katz would get all the furniture, fixtures and equipment, including all paper-making machinery and pulp stock preparation equipment now located at the Collins plant in North Wilbraham, exclusive of the hydro-electric plant, heating apparatus and boiler room equipment. He also agrees to dismantle and move the property at his own expense and to grant the seller the use of steam turbines, which are included in the purchase, for one year.

The Springfield Newspapers Employes Beneficial Fund has made offers to lease and operate the concern, which developed a de-inking process in which there is much interest in publishing circles, but its offers were turned down by the Collins management.

DISTRICT SALES MGRS

John Hussey (left) and E. J. Hill (right) have been named district sales managers for the chemical division of the Goodyear Tire & Rubber Co. . . . Mr. Hussey, whose headquarters will be in Boston, will handle New England, and Mr. Hill, working out of Cleveland, will handle the Cleveland district. . . . Both were representatives of the former plastics and coatings department until the chemical division was created.

Paper Bag Institute Appraises F. O. B. Pricing

NEW YORK—The Paper Bag Institute has sent the following letter to Senator Capehart on the subject of f.o.b. plant pricing, J. A. C. Kavanagh reports:

"The Paper Bag Institute, Inc., has carefully considered your letter of August 24, 1948, with reference to the effect of the Federal Trade Commission's policies relative to prices.

"This reply has been authorized by vote of the company members of the Institute represented at a meeting called for consideration of your letter.

"For your convenience we summarize our conclusions as follows: We believe that compulsory f.o.b. plant pricing in our industry will: (a) Jeopardize and seriously affect long established manufacturer-customer relationships; (b) Tend to restrict producer-distributor relations; (c) Endanger the investment of millions of dollars in producers' and distributors' business; (d) Tend to restrict individual mill production and lead to increased cost of production and result in increased prices to consumers, or tend to increase concentration and integration at the production level; (e) Create artificial trade barriers based upon freight costs and reduce competition both at the production and distributor levels; (f) Disrupt labor placement and security in the industry; and (g) Restrict the price competition now existing in the industry.

"In support of the foregoing conclusions we submit the following historical and economic facts relating to this industry.

"The Paper Bag Institute, Inc., is a trade association composed of the great majority of manufacturers of standard grocers and variety bags. Its membership includes (1) mills which own pulp and paper and converting plants for the manufacture of bags, (2) mills which produce paper from purchased pulp and convert such paper into bags, and (3) mills which purchase paper and convert it into bags.

"The principal products of the members of this Institute are bags made from kraft paper. Until several years ago the larger volume of kraft paper was manufactured in the Northeastern and the Lake States. About 25 years ago it was discovered that Southern pine was suitable for the manufacture of kraft paper and with that discovery the manufacture of kraft paper began to move from the Northeastern and Lake States to the South Atlantic Seaboard and Gulf States, from Richmond, Virginia, southward and westward to Texas. Today approximately 85 percent of the bag paper consumed by this industry is manufactured in the South and the remaining 15 percent in the Pacific Northwest area. The reason for this trend in the industry was the presence of an immediate and future adequate supply of pulpwood coupled with the presence of economical fuel in the form of natural gas.

"These Southern states, in which the manufacture of kraft bag paper is concentrated, consume less than 18 percent of the products of this industry. By the same token no state, other than these Southern and Pacific Northwest States, produces sufficient grocers bag paper to supply its needs.

"It is obvious that the production of kraft grocers and variety bag paper has located in the Southern and Pacific Coast states solely because of economic factors.

"It is a fact that for every ton of kraft paper manufactured between four and five tons of the principal raw material, namely, pulpwood, are consumed. It is, therefore, axiomatic that the economics of the industry require the continued operation of kraft paper mills in their present locations.

"In the face of this historical and economic situation in the kraft paper industry, it is imperative that not only existing mills but future mills must service the entire consuming area of the United States.

"The Institute does not gather nor disseminate prices of its members nor has it any records of the pricing policies of its members. It is common knowledge, however, that the pricing policies of its members fall into several categories, including the following: (a) A price delivered to any point in the country where a given mill does business, or an f.o.b. mill price with full freight allowed. (b) An f.o.b. mill price with freight allowed up to given maximums. (c) An f.o.b. mill price based upon zones dependent upon distance from a given mill with freight allowed to destination.

"In general the products of this industry are of like quality and grade and no producer can, because of superior quality and grade, secure a higher price for his product than the price at which a competitor's similar products may be obtained. In order to enable an industry, centralized in a restricted area because of sound economic factors, to distribute products over a country-wide consuming area, the price of one manufacturer at any given point must necessarily approximate the price of any competitor. The imposition of a compulsory f.o.b. mill price in this industry would accordingly create artificial trade barriers within which the mill having a competitive freight advantage would outprice all of its competition and would tend to monopolize the entire business of the territory. At the same time, long established trade relations which have been built through the years on trade-names, service and the intangible values of good-will will be disrupted. A producer, thus arbitrarily deprived of a market by reason of its freight disadvantage, would be forced to restrict or curtail its production, thereby increasing its unit cost and raising the cost to the consumers located in its own limited, adjacent market.

"The Industry this association represents has millions of dollars invested and the gross value of its products is over $100,000,000 annually. Eighty percent of its members are what would generally be called "small businesses." Its present plants give employment to thousands of people and are vital factors in the communities in which they are located. Disruption of this industry is inevitable if f.o.b. mill pricing is made compulsory and such disruption will work a tremendous hardship upon thousands of employees and the communities in which they live and upon thousands of workers engaged in the distribution (jobbing) of the industry's products."

RICHARD C. DOANE

—elected vice-president in charge of sales of the International Paper Co., New York City, on December 28. . . . Mr. Doane was vice-president and general manager of the Canadian International Paper Co., Montreal, a position which he is resigning to assume his new duties in New York.

11 Advisory Committees

WASHINGTON—A group of advisory committees for the forest products industries will be established to work with Department of Commerce officials on domestic production and distribution problems, the Department reports.

Five production and six distribution committees will be operating, according to Harold E. Holman, chief of the Forest Products Division, Office of Domestic Commerce.

Separate production committees will be concerned with primary forest products, pulp and paper, lumber, plywood and veneer, and lumber products and wood fabrications. The Pulp and Paper Committee, which has existed for several years, has advised the Department on production problems and will continue in this capacity.

In distribution, separate committees will represent lumber concentration yards, commission men, wholesalers, and retailers, paper and paperboard wholesale merchants, and pulp, paper and paperboard converters.

Advisory committees will be made up of representatives of small, medium and large size businesses in various parts of the country. Committee members will be appointed shortly, Mr. Holman said, and meetings will be announced as soon as scheduled.

Container, Packaging Ind.

WASHINGTON — The container and packaging industry has narrowed the gap between supply and demand and is now in general, able to furnish adequate supplies of packaging items, the Department of Commerce reported on January 3.

"Ample supplies of paperboard and paper packaging materials seem to be assured by newly expanded facilities which are now operating at near peak levels," the Department said. "Supplies of raw materials for production of wood, glass and textile containers are also increasing."

The full report, "Containers and Packaging" is available from Department of Commerce or its field offices.

Supreme Court Hits Holyoke Mills' Power Rights

HOLYOKE, Mass. — A United States Supreme Court decision, filed late in November, may have important implications bearing on the effort being made by the Holyoke Gas & Electric Department to take over the Holyoke dam and the dam-site as a major part of its public ownership program.

The battle is between the municipally-operated department on one-hand, and the privately-owned Holyoke Water Power Co., on the other. It is important to paper manufacturers here, since they have held, for 100 years, power rights on the city's three-level canal system.

The decision, rendered by a five-to-four division, aims a body blow at the theory that the Holyoke Water Power Co. is a "trespasser" on the river and that its dam and other attached properties may be taken over with damages based on the investment value and potential value of the power already harnessed or to be harnessed.

The case came to the Supreme Court on a writ of certiorari from the Supreme Court of Oklahoma in the matter of the Grand River Dam Authority —a public corporation, as petitioner vs. Grand-Hydro, a private power corporation. Associate Justice Burton read the majority decision, concurred in by Chief Justice Vinson and Associate Justices Frankfurter, Jackson and Reed. The minority opinion was written by Associate Justice Douglas, and concurred in by Associate Justices Black, Murphy and Rutledge.

Back of the consideration of the appealed case by the Supreme Court is a long battle in the Oklahoma state courts between the two companies in competition for the development of power on the Grand River, a non-navigable stream, and a tributary of the Arkansas River, a navigable stream. In the preliminary stages, the fact that the stream was considered non-navigable kept it within state bounds, but a ruling that water from the stream affects Arkansas River water levels and therefore brings the Grand River within the operations of the Federal Power Act, put the Federal Power Commission into the picture.

Grand Hydro was granted authority to buy and hold property, build a dam and develop hydro-power by an Oklahoma state act in 1929. The Grand River Dam Authority was created by the Oklahoma Legislature six years later and given powers that overlapped and replaced those already granted Grand Hydro. Agreements were entered into between the private corporation and the authority by which the latter took over certain parcels of land necessary for the dam site, subject to determination of damages by court action.

WARD EMPLOYES' CHRISTMAS PARTY

Ralph G. Luff, President of D. L. Ward Co., Philadelphia, leading a song fest of Christmas carols at the firm's annual Christmas party at Hotel Warwick, attended by some 150 employes and guests.

A commission fixed damages as $281,000, with neither party satisfied, and both demanding jury decision. The jury set damages at $136,000. The case was taken to the state supreme court where the decision was reversed and the case remanded for trial on the ground that certain expert evidence included at the trial should have been admitted. The evidence had to do largely with the potential value of the dam and dam-site. At the new trial, damages were set at $800,000 plus interest on $518,000 already paid in as damages. The court decision was approved by the state supreme court and appealed to the Federal Supreme Court.

The latter body has now supported the position taken by the Oklahoma high court and, in the majority decision, deals not only with the state decision but in the position of the FPC. In the decision, it is stated:

"It is clear that the Federal Power Act cannot be said to have so far affected the use of this land for a power site as to destroy or otherwise render valueless the owner's right to use it for that purpose. The Act merely has attached conditions to the use of the land for a power site. The Act seeks to encourage rather than prohibit the development of power sites. It seeks to preserve or enhance, not to destroy, their value as such. While the Act has limited the time and manner of the use of this particular land for a power site, the Act has left great benefits available to the owner from such a use for the land. The present large development of this site by the petitioner is convincing proof of the value and availability of the land for that purpose.

"As to the question whether the Federal Power Act should be interpreted as actually superseding the state law of condemnation and as restricting the measure of valuation which lawfully may be used by the courts of Oklahoma in a condemnation action for the acquisition of land for power site purposes by an agency of the state, there is nothing in the Federal Power Act to indicate that an attempt has been made by Congress to make such a nationwide change in state laws."

The minority opinion holds: "The U. S. has asserted, through the Federal Power Act, its exclusive dominion and control over this water power. . . . Respondent therefore has no claim to the water-power value which the law can recognize, if the policy of the Federal Power Act is to be respected. . . . Whatever the procedure, the consequence is to give private parties an entrenched property interest in the public domain, which the Federal Power Act was designed to defeat."

The similarities in the Oklahoma case and the Holyoke case are so many and the possible application of the same reasoning by the courts, and especially the U. S. Supreme Court, that the decision will be carefully studied by the steadily growing batteries of legal talent being gathered for the mighty struggle for control of the Holyoke power situation.

Export Strictures Eased

WASHINGTON — Validated licenses for export of caustic soda and soda ash were eliminated as of January 1 for countries outside the so-called "R" countries of Europe and adjacent areas, the Office of International Trade discloses. Easing of export requirements so far as designated countries are concerned was made possible by improved world production, it was stated.

United States Imports and Exports

Pulpwood, Wood Pulp, Paper, Paperboard and Paper Products

October, September and First Ten Months of 1948 — Preliminary Figures

EXPORTS (In short tons except where otherwise indicated)

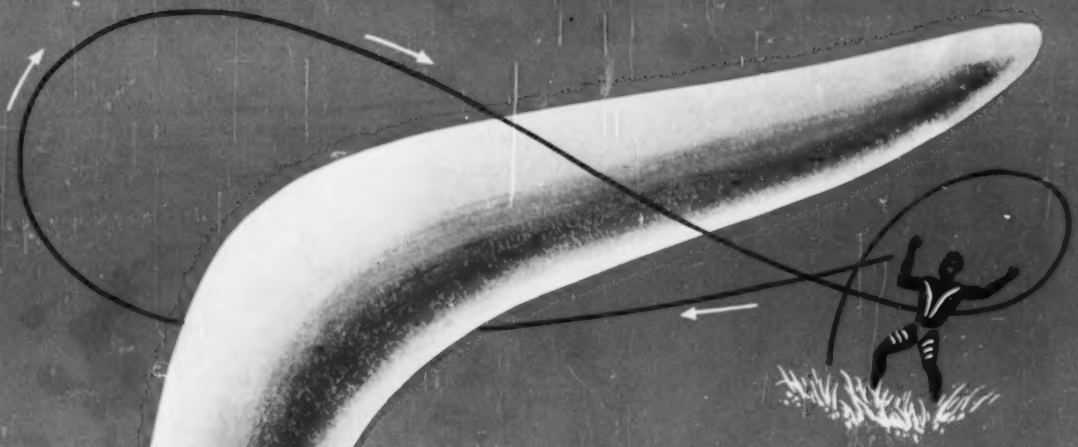
Item	October 1948	October 1947	September 1948	First 10 months 1948	First 10 months 1947
Pulpwood (in cords of 128 cu. ft.)	624	2,824	340	34,000	69,729
Wood pulp, total	1,591	16,090	423	73,064	r111,484
Bleached sulphite, rayon and special chemical grades	576	r1,194	386	12,963	r9,667
Bleached sulphite, other	239	6,606	.....	14,054	38,878
Unbleached sulphite	226	6,604	20	38,418	48,547
Bleached sulphate	90	3	.....	716	2,185
Unbleached sulphate	270	1,683	.....	5,354	9,759
Soda pulp	.....	.....	.....	534	569
Screenings and other wood pulp	190	.....	17	1,025	1,879
Waste fibrous materials-total	12,642	10,780	r9,798	131,253	141,779
Overissue news	1,925	1,320	700	19,460	29,405
Other waste paper	10,011	7,961	r8,281	97,212	98,889
Rags for paper stock; valued at $50 or over per ton	103	148	83	2,631	2,960
Rags for paper stock; valued under $50 per ton	457	1,068	692	7,620	7,194
Other paper stock	146	283	r42	4,330	3,331
Paper, paperboard and paper products, total	34,176	46,538	29,233	336,646	r396,338
Paper and paperboard, total	25,509	34,236	22,209	249,496	294,224
Paper, total	12,093	19,174	10,563	137,154	177,976
Newsprint	2,044	2,070	1,899	23,228	22,668
Book paper, uncoated	3,084	5,277	3,496	39,720	44,545
Fine paper, total	3,888	5,641	2,528	37,776	56,869
Writing paper	2,705	3,643	1,768	24,369	39,043
Cover paper	169	224	119	997	2,804
Bristols	472	399	132	4,709	4,904
Cigarette paper	602	1,375	509	7,701	10,118
Wrapping, bag, and converting paper, total	1,824	4,215	1,626	23,488	35,558
Greaseproof and waterproof paper	477	1,138	530	7,355	11,685
Wrapping, except kraft	507	1,362	318	7,599	13,196
Kraft wrapping	840	1,715	778	8,534	10,677
Tissue and crepe paper	448	678	298	4,303	6,527
Blotting paper	136	436	273	2,220	3,888
Sheathing and building paper	669	857	443	6,419	7,921
Paperboard, total	13,416	15,062	11,646	112,342	116,248
Kraft container board	3,615	7,279	5,323	44,357	42,085
Other container and boxboard	1,672	740	616	7,722	9,907
Other paperboard	3,971	3,120	3,876	28,833	29,534
Fiber insulation board	2,143	2,629	682	16,004	23,881
Wallboard	2,015	1,294	1,149	15,426	10,841
Paper products, total	8,667	12,302	7,024	87,150	r102,114
Surface-coated paper	865	2,282	539	10,836	18,324
Toilet paper	604	719	588	6,072	6,567
Paper towels and napkins	145	205	98	1,656	1,755
Filing folders, index cards, and other office forms	172	254	127	1,586	1,449
Papeteries	3	15	1	51	381
Wallpaper	1	24	2	79	600
Shipping Sacks	2,870	3,705	1,864	20,649	17,968
Paper bags	557	595	796	5,872	8,703
Shipping containers	638	552	533	7,564	7,253
Boxes and cartons	352	511	405	4,405	5,932
Envelopes	70	84	39	741	1,066
Cash-register and adding-machine paper	144	455	326	3,236	3,617
Other paper and products	2,246	2,901	1,706	24,403	r28,499

IMPORTS

Item	October 1948	October 1947	September 1948	First 10 months 1948	First 10 months 1947
Pulpwood, total (in cords of 128 cu. ft.)	179,222	178,393	192,038	1,765,983	1,553,684
Rough	75,926	104,256	93,743	811,662	847,412
Peeled	91,153	68,159	95,129	876,429	645,288
Rossed	.....	158	56	738	617
Chipped	12,143	5,820	3,110	77,154	60,367
Wood pulp, total	149,272	r194,019	154,783	1,861,597	r1,898,390
Bleached sulphite, rayon and special chemical grades	17,273	26,252	24,164	206,311	206,187
Bleached sulphite, other	25,269	27,206	25,232	264,977	240,505
Unbleached sulphite	45,694	r55,877	40,698	584,977	r612,471
Bleached sulphate	19,532	22,302	25,032	234,711	r191,225
Unbleached sulphate	21,036	r34,500	14,999	298,612	r377,143
Soda pulp	2,184	1,929	1,899	20,606	16,835
Chemical screenings	500	830	440	7,122	7,769
Bleached groundwood	.....	.....	.....	.....	.....
Unbleached groundwood	17,467	24,742	21,905	240,586	242,297
Groundwood screenings	317	381	414	3,695	3,958
Waste fibrous materials, total	8,996	r9,632	7,156	85,108	r64,611
Rags for paper stock	1,192	1,254	763	17,760	10,183
Other pulp, rag, straw, esparto, etc.	.....	.....	4	4	31
Other waste fibrous materials	7,804	r8,378	6,389	67,344	r54,397
Paper, paperboard and paper products, total	375,536	369,455	r363,479	3,724,616	3,389,945
Paper and paperboard, total	375,010	368,956	362,962	3,719,457	3,385,863
Paper, total	369,802	363,196	357,791	3,657,199	3,336,616
Newsprint	362,298	355,605	349,476	3,569,334	3,253,056
Printing and book paper, uncoated	6,943	5,394	7,343	69,063	63,017
Fine paper, total	70	31	39	541	625
Writing paper	3	5	6	89	73
Cover paper	1	.....	.....	2	(1)
Bristols	1	.....	7	13	2
Thin paper	61	25	23	397	486
Other fine paper	4	1	3	40	64
Wrapping bag, and converting paper, total	464	2,161	854	16,606	18,596
Greaseproof	1	18	(1)	30	69
Vegetable parchment	1	2	.....	13	7
Kraft wrapping	440	1,484	565	9,208	8,192
Wrapping, except kraft	22	657	289	7,355	10,328
Tissue and crepe paper	1	(1)	23	1,259	812
Absorbent paper	11	2	42	101	43
Building paper	15	3	14	295	467
Paperboard, total	5,208	5,760	5,171	62,258	49,247
Kraft container board	.....	.....	.....	604	.....
Other container and boxboard	.....	.....	.....	25	2,745
Other paperboard	3,064	3,020	3,443	36,362	18,413
Fiber insulation board	.....	74	.....	187	1,276
Wallboard	2,144	2,666	1,728	25,080	26,813
Paper products	526	499	r517	5,159	4,082

[1] Less than one-half ton. r Revised; subject to further revision. Source: Prepared in the Forest Products Branch, Office of International Trade. Data from the Bureau of the Census, United States Department of Commerce. Note: Figures are preliminary; subject to revision.

boomerang: a piece of flat, curved wood which when thrown returns to the thrower.



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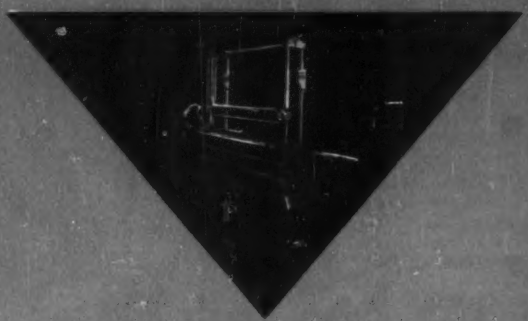

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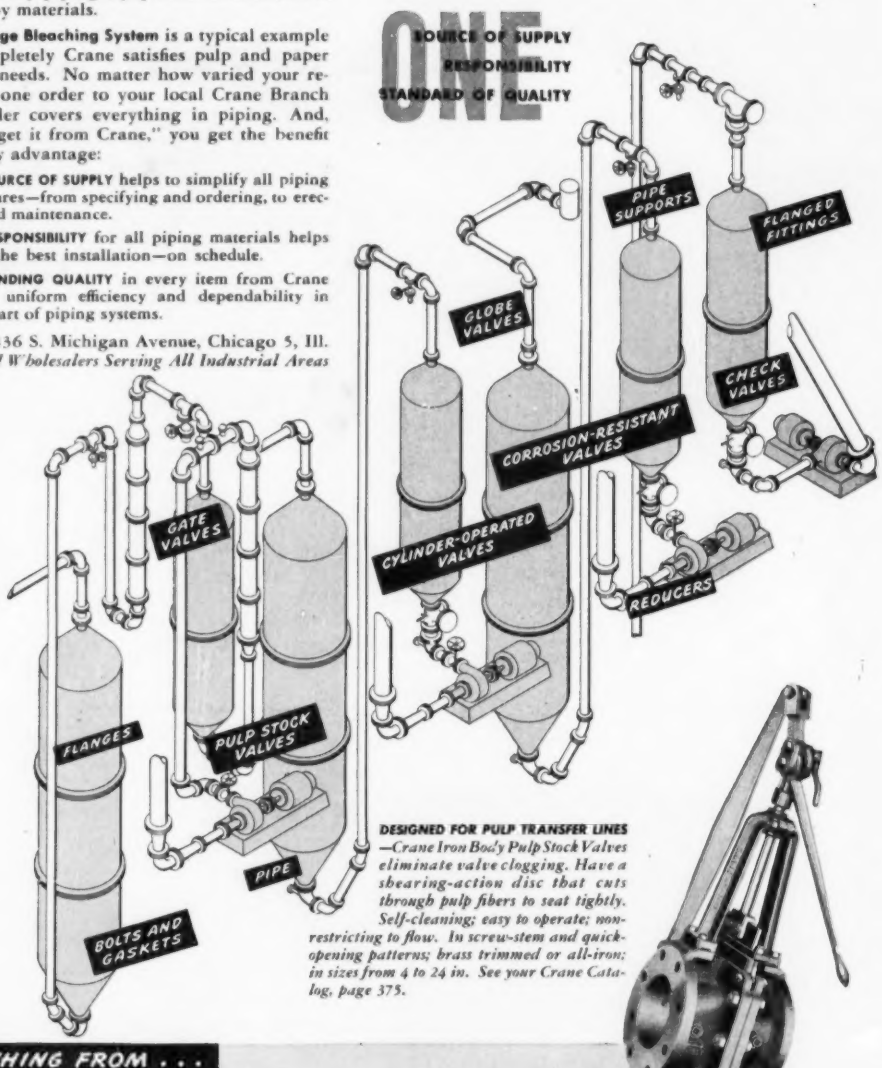

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Handling of Dry Broke in Paper Mills

By TANY AGRONIN

Chief Engineer, Shartle Brothers Machine Co., Div. of Black-Clawson Co., Middletown, Ohio

The correct handling of broke is becoming an important problem in most of the larger paper mills. It is especially important at present when the cost of labor is increasing steadily and any manual operation greatly increases the overall cost of the product.

As long as we are not all perfect there will always be broke made in the paper mill, so that its handling is a problem which should be carefully studied in order to determine the most satisfactory methods of handling it at the lowest possible cost.

The original way of handling broke was to collect it at the dry end of the machine and carry it back to the beater room and mix it in with the stock in the beater.

This particular method is still followed by a lot of specialty mills and works out satisfactorily where the tonnage is small and where it is necessary to separate the types of broke due to the numbers and types of paper made by that particular mill. In some mills which are still following this plan they have a small batch-type beater which is used to break up the broke. It is then dropped to the chest in which the broke is to be mixed. The general type of beater is a conventional Hollander beater as shown on *Fig. 1*.

After the continuous or breaker beater was developed, it soon found its way into applications for handling broke in paper mills.

For a number of years the conventional continuous beater was installed alongside the dry end of the machine and the broke was carried over to it and pulped continuously. It was then pumped back to either the machine chest or to a supplementary chest from which the broke stock was metered into the machine chest, or metered directly to the Jordan head box. *Fig. 2* covers an installation of this kind with a concrete tub installed at Longview Paper Co.

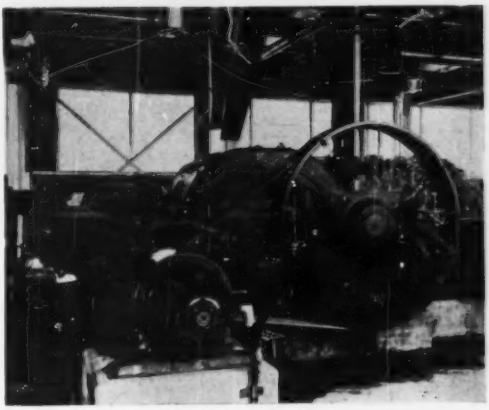


Figure 1—Hollander beater.

Fig. 3 shows a modern Miami breaker beater with all welded tub being erected in our shop. A large number of beaters of this type have been installed in the South, handling the broke on various paper machines.

As the machine tonnages increased, and the problem of handling the broke became greater, various special designs were developed in order to eliminate broke handling, thus reducing the amount of work required.

Apparently the first ones to consider this application were the newsprint mills. For some reason or another, the newsprint boys were ahead of all others in the efficient handling of machine broke. This was probably due to the fact that they had the first high-speed machines of any great tonnage, and of course the question of handling broke on the high-speed machine was more important.

At the Great Northern Paper Mills in 1928, a breaker beater was designed with a special tub to handle the broke directly from two of their paper machines. This general arrangement is shown on *Fig. 4*. You will note the tub was extended under two of their machines so that the broke would drop directly from the last dryers to the breaker beater.

This installation was so successful that they have ordered a large number of these machines, and thus equipped all of their machines, in fact we shipped a unit similar to this about a month ago. This beater has an 84 x 72" roll and requires 150 H.P.

Presented at the Joint Fall Meeting of the Southern and Southeastern Divisions of the American Pulp & Paper Mill Superintendents Ass'n., Atlanta, Ga., October 21-23, 1948.

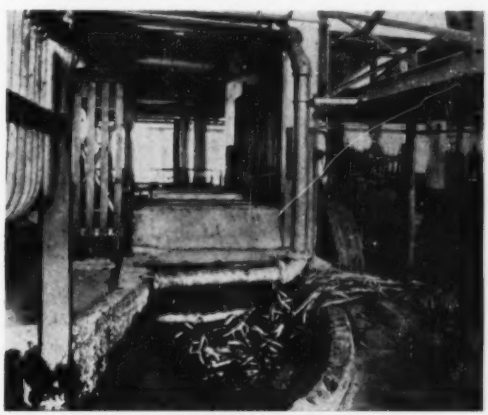


Figure 2—Breaker beater at Longview Paper Co.

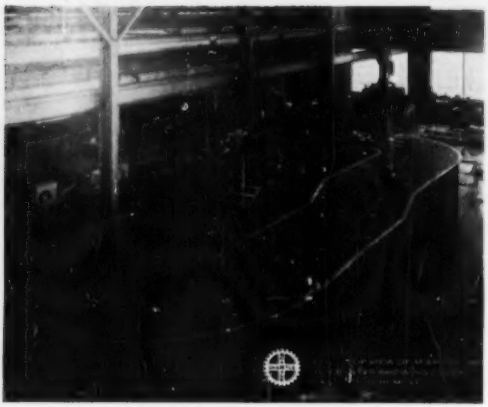


Figure 3—Welded breaker beater tub.

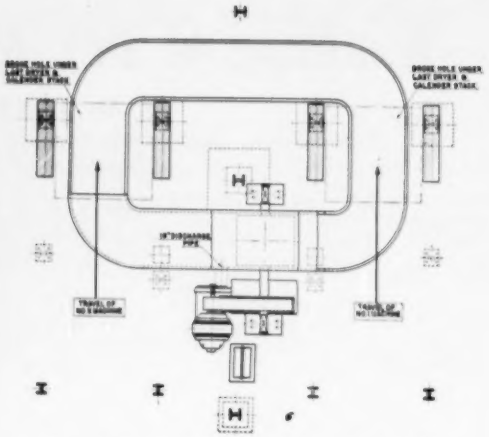


Figure 4—Special breaker beater at Great Northern, Pa.

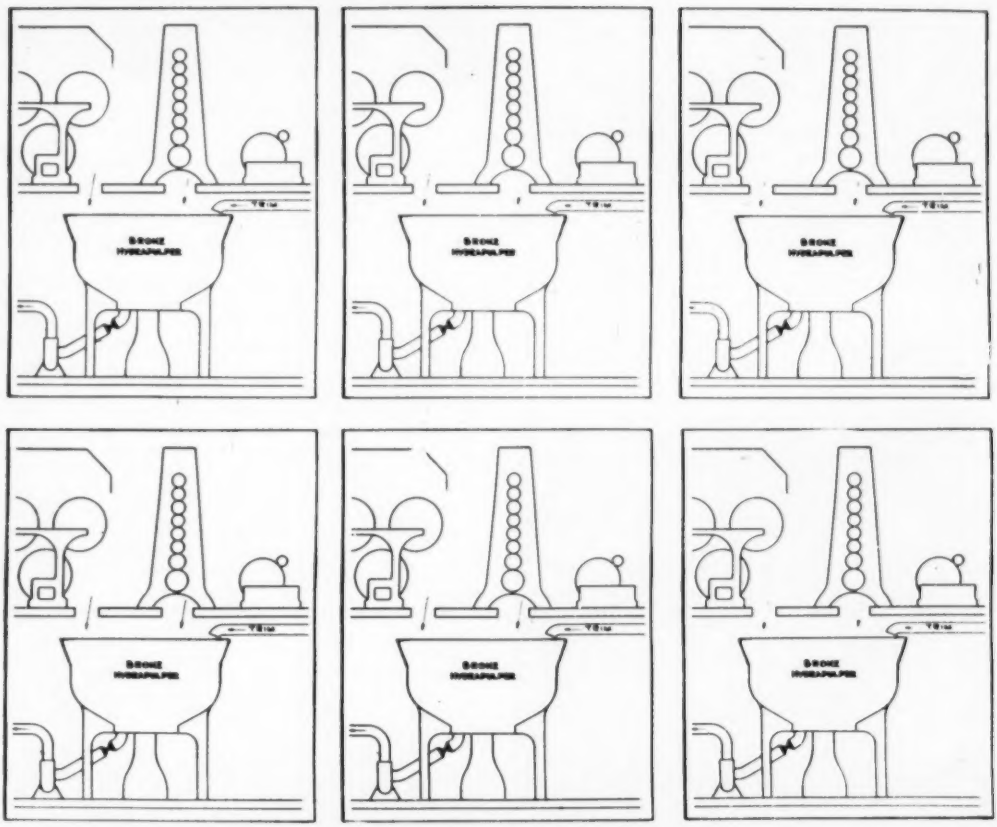


Figure 6—Broke Hydrapulper schematic layout.

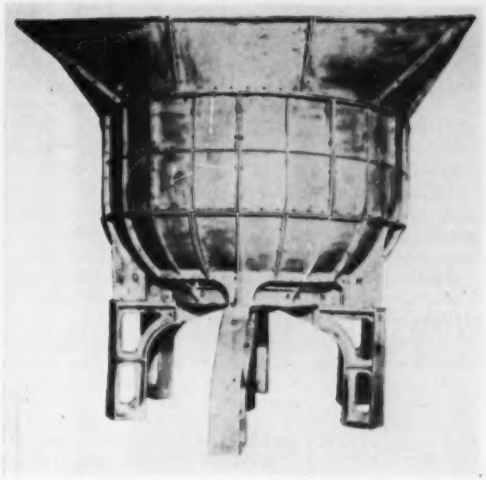
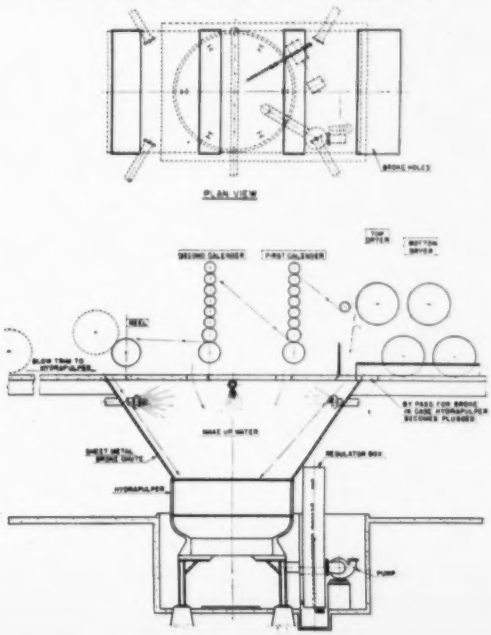


Figure 5—Flock broke Hydrapulper.

However, about eight years ago, the Shartle-Dilts organizations came out with an entirely new pulping principle which was named the HYDRAPULPER. This machine is superior to anything developed to date in regard to rapid pulping; therefore, it was not long before attempts were made to introduce this particular pulper for handling broke in mills. The first was installed by our Canadian affiliate in a news print mill in Canada in 1941. They installed two Hydrapulpers underneath the calenders and since then this mill has installed four more so there are now six broke Hydrapulpers handling the stock in this mill. An actual photograph of one of these Hydrapulpers set up in our Canadian plant prior to shipment is illustrated on *Fig. 5*. A schematic layout of this pulper under the calender stack is shown in *Fig. 6*.

Figure 7—Broke Hydrapulper for Multiwall bagging mill.



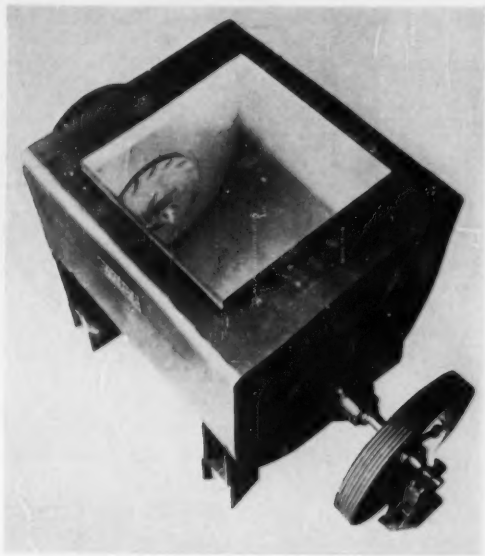
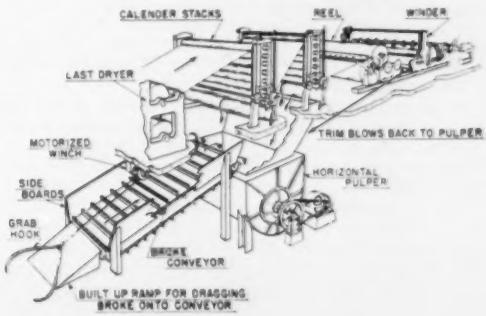


Figure 8—Horizontal pulper.

Due to our success in handling broke in newsprint mills, an installation was then developed for a multiwall bag mill on the west coast as shown by *Fig. 7*. This particular design has all of experience developed to date in the continuous handling of broke in Hydrapulpers. You will note this is a standard 14-foot unit in which the top of the tub is flared up so that we can pick up the broke from the reel, two calenders and the last dryer. There is a special by-pass installed next to the last dryer so that if there happens to be more broke made than can

Figure 9—Installation of horizontal pulper.



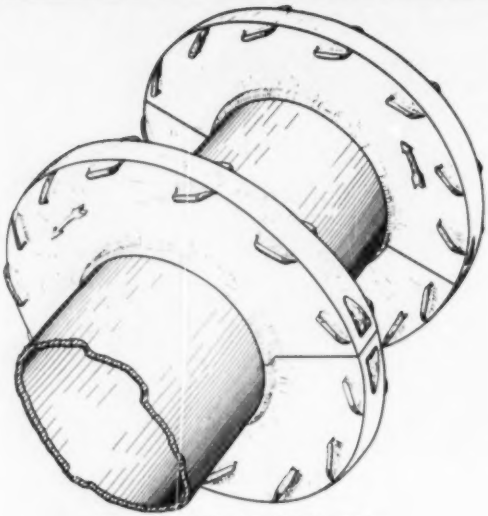


Figure 11—Shartle Miami Drubber Rotor.

be handled by the pulper the sheet can be by-passed into a pit.

There are special showers spaced around this unit to wet the sheet as it starts down into the pulper. This is a continuous unit in that the stock is continuously pumped away at the same rate at which it is pulped.

There is an automatic control on the regulating box so that the position of the gate is controlled in case of a break. In normal conditions the top of the gate is near the bottom of the tub so that just a small amount of broke is continuously handled at a very low horsepower consumption. In case of a break, the electric control raises the gate so that a large amount of water and pulp can be handled in the pulper. You will note in this particular unit, it runs all the way from 500 lbs. at the lower gate setting to 3,500 lbs. at the maximum capacity, based on pulping at five percent.

Herein is one of the basic differences between the installation of a breaker beater and Hydrapulper for handling machine broke. Due to the slower pulping time of the breaker beater we used to figure the tub size on the basis of handling one hour's production of the paper machine. It is for that reason we used such a large tub on the Great Northern job. Due to the faster pulping time of the Hydrapulper we have greatly reduced the tub capacity. In fact, the maximum at which we figure any of these jobs to date is to have a tub large enough to only handle about 15 to 20 minutes of the total machine production.

It is understandable that most mills are not going to continue to make broke at maximum machine speeds for any long period. This indicates a relative size of the Hydrapulper to breaker beater in view of the faster pulping time.

The second feature of the Hydrapulper is its ability, due to its vortex action, to handle fluffy stock. Any of you who have watched the Hydrapulper will know that this particular vortex will pull in a light fluffy material much faster than can possibly be done by means of a roll in a breaker beater. Thus this unit is more adaptable to certain applications than a breaker beater.

We have predicated the size of the unit in order to take care of what we consider the maximum amount of broke possible at the machine speeds they plan to run; however, we have taken care of the safety features indicated previously, in case they make more broke than we have estimated.

The trim from the rewinders is blown back to the pulper continuously.

This particular design has been more or less the basis for most of the new broke Hydrapulper applications. You will note that with this unit the manual handling of broke is practically eliminated.

Another factor in handling the broke in this manner is the elimination of dirt which is normally picked up by the broke when it drops into the pit.

The only disadvantage in a system of this kind is in the basement depth required. In order to take care of applications in shallow basements, we have developed a horizontal pulper as per *Fig. 8*. This unit is an elliptical tank with a rotor at each end and is designed so that under normal operating conditions when only the trim has to be handled, one rotor will take care of it. In case of a break, the second rotor automatically starts up to maintain the capacity required.

This particular pulper can be set off to one side, or it can be set directly under the calender stack as per *Fig. 9*. This application was developed for a board mill. You will note that there is included a long conveyor with a motorized winch to carry the broke from the under side of the dryer pit to the horizontal pulper.

There are a number of Hydrapulpers used in board mills to handle the broke. In most cases, the pulpers are set alongside the dry end of the machine and the broke is dropped into it and handled continuously. An installation of this type has been in operation at the Continental Paper Co., Ridgefield Park, N. J., for approximately eight years.

Another Hydrapulper application for handling broke is in mills which have converting plants in addition to their paper mills. A number of Hydrapulpers have been installed in mills of this kind to handle the converted broke. In most cases these have been continuous units with the stock being pumped back directly to the chests in the mill.

One of the problems in handling broke continuously is to get complete fiber separation. No pulping machine developed to date gives complete fiber separation. Some supplementary means is normally required to get the pulp into a completely defibered state. In most cases, the stock is pumped back to the Jordan chest and rejordaned back into the machine chest. This, however, is

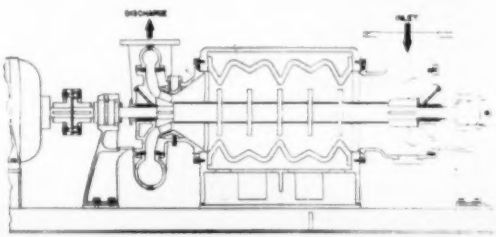


Figure 10—Shartle Miami Drubber.

not satisfactory in that we have taken the stock which is already correct for the manufacture of the specific paper required and have done additional work to it, thus slowing it up. Of course, in most applications, this is taken care of by metering small amounts of broke in with the stock. However, we have recently developed a machine which we recommend for the installation between the Hydrapulper, or Breaker Beater, and machine or dump chest. This is known as the Shartle Miami Stock Drubber, as indicated on *Fig. 10*.

The rotors of the Drubber, as shown on *Fig. 11*, are actually miniature Hydrapulpers. The machine is designed to greatly intensify the defibering action which is obtained from the Hydrapulper by confining the work to a small area.

If you will refer again to *Fig. 10*, you will note that these rotors operate in a casing designed in such a manner that the stock is carried into the zone of the miniature Hydrapulpers a number of times. This insures practically complete defibering without any change in fiber length, thus eliminating any possible slowing up of the stock. This machine, if correctly installed, will eliminate, to a great extent, the necessity of metering this pulp, because you will be putting back into your machine chest the equivalent pulp of practically the same fiber characteristics as that of the other stock in the chest.

Controlled Stock Flow to the Machine

By R. L. KUTTER

Vice-President and Sales Manager, Black-Clawson Co., Hamilton, Ohio

Outside of the preparation of the stock, most formation difficulties originate in the approach flow to the forming part of the machine, that is, the head box of a Fourdrinier or the forming area of a cylinder machine.

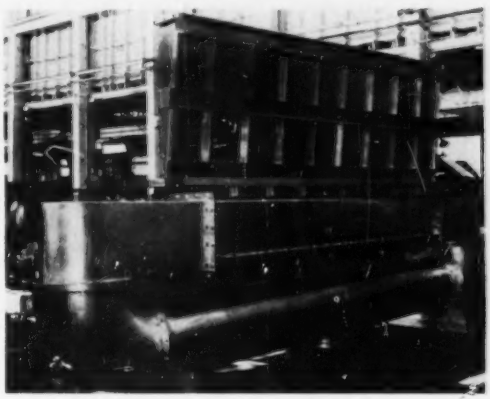
Several factors are involved which if fully realized should go far in contributing toward the best possible approach flow resulting in good sheet formation. (1) The velocity and volume of discharge should be the same per unit width all the way across the machine. (2) The fibre distribution in the water should be absolutely uniform so that the consistency is exactly the same at all points before formation takes place. (3) Eddies, or a certain degree of turbulence is always present and can not be avoided. Thus eddies should be kept to an absolute minimum since large eddies tend to cause unequal fibre distribution thus disturbing formation.

In the case of multiple pipe inlets, stock will enter only at the point where the pipe inlets are located thus making cross currents and large eddies a foregone conclusion in order to permit distribution of the stock all the way across the machine.

Where hopper type inlets are used, the flow just cannot be parallel due to the nature of the inlet passage and therefore there will be cross currents in the head box approaching the slice or in the vat as the case may be.

In many instances long hopper inlets have been designed with the idea of accomplishing proper fibre distribution. However, it is felt that the friction of the side walls on these hopper installations tends to cause a segregation resulting in a lower fibre density at the extreme edges which may eventually result in light sheet edges.

Another approach flow arrangement frequently used is the one in which two or more screens discharge directly into the flow box. In cases of this kind, the variations in consistency of one screen to that of the other screen will cause similar variation in consistency of the stock approaching the slice, thus affecting the weight of the sheet accordingly since it is almost impossible to mix the flows coming from the individual screens before they



The Hydronamic Inlet.

enter the slice. One way to overcome these difficulties to some extent is to have the stock from the various screens discharge into a common screen collecting box from where it would flow directly into the head box through a common pipe in which all of the stock has to be mixed together. An even better mixture of the various stocks could be obtained by passing same through a centrifugal pump rather than to discharge it directly from the collecting box into the head box by gravity.

Where screens discharge directly into the head box, the consistency coming from the screens will vary from time to time depending upon the amount of shower water on the screen and the amount of open area through the screens as they gradually become plugged and this means there is a constantly varying fibre concentration in the stock causing the sheet to be heavy in one place at one time and light in another place at the same time, but varying from time to time. This has been found definitely to be the case in several instances where elaborate tests have been made and observations of conditions over a protracted period of time.

A continuous slot orifice the full width of the ma-

Presented at the Joint Fall Meeting of the Southern and Southeastern Divisions of the American Pulp & Paper Mill Superintendents Ass'n., Atlanta, Ga., October 21-23, 1948.

chine appears to be the only solution to uniform flow distribution. Even with a continuous slot orifice it is of course necessary to have uniform pressure differential across the slot and that can only be obtained by having substantially uniform velocity of the stock in the duct ahead of the orifice. To our mind this can be obtained most effectively with the tapered duct arrangement as used in our Hydronamic inlet.

In order to obtain uniform fibre distribution across the width of the machine, it is of course necessary to have all of the stock subjected to the same hydraulic treatment in approaching the head box or the vat as otherwise centrifugal forces will cause segregation of the stock with greater density in some places than others depending upon the flow conditions.

The Hydronamic inlet, as such, consists of two tapered ducts extending across the width of the machine with the stock coming in at the large ends and flowing in opposite directions but with a common slot orifice for the two tapered ducts. The vertical partition plate between the two ducts is disposed parallel with the slot orifice the length of which is equal to the full deckle width of the machine with the top of the partition plate being about one to two inches below the slot.

The stock is supplied to the Hydronamic inlet by means of a branch cross pipe permitting approximately one-half of the total stock to enter the large end of one duct from the front side of the machine and the balance of the stock entering the large end of the duct from the back side of the machine.

As the stock flows from the large end of the duct towards the small end, it is discharged through the slot orifice and since the cross sectional area of the duct diminishes at the same rate as the longitudinal flow in the duct diminishes, the stock velocity must of necessity be the same at all points across the width of the machine. This naturally assures a uniform pressure differential across the slot orifice which in turn results in uniform stock discharge at all points.

In this way the same conditions as to velocity and flow exist all the way across the machine thus enabling the inlet to discharge the uniformly distributed stock into the head box or the vat with a minimum of cross currents or eddies.

Another feature provided with the Hydronamic inlet is a passage space around each end of the diagonal partition of about one inch in width which will permit a small but continuous circulation so that stock bundles will not form in the ends of the ducts but all of the stock will remain in continuous circulation.

The question of flocculation is of course a very important factor and it must be realized that the quicker stock can be gotten onto the wire or into the vat after it has been thoroughly disbursed, the less chance of flocculation will be present. Since the stock after passing through the Hydronamic inlet is rather thoroughly deflocculated due to the relatively high velocity through the slot orifice followed by expansion in the approach flow, the travel of the stock to the slice or to the forming area of the cylinder mold should be as short as possible.

Wherever the flow distance due to other design consideration must be fairly long between the orifice of the Hydronamic inlet and the slice or the cylinder mold forming area, a perforated roll may be used to good advantage for breaking up any possible flocculations.

It is a well known fact also that the stock flowing onto the machine should be as completely deaerated as possible. On Fourdrinier machines it is our opinion that the wire pit must be made deeper and longer than usual and be provided with baffles so as to carry the white water from the tray spouts up to the extreme end of the pit near the breast roll permitting a maximum of dwell time causing air bubbles to rise to the surface while the white water is flowing toward the discharge of the wire pit. Ample depth of white water over the flow pump suction connection must also be provided to prevent the formation of a vortex and subsequent entrainment of air.

On cylinder machines, deaeration of the stock can be approached by preventing, insofar as possible, air from entering into the stock by white water cascading over the overflow dam of the uniflow vat or over the dam of the screen collecting box when the stock enters the mix box. To prevent cascading of stock in these particular locations, we have designed an automatic liquid level control which will permit the operators to keep up the stock level in the various locations to permit a smooth even flow without cascading, thus preventing additional air from being entrained into the stock flow. This liquid level control instrument is actuated by means of a rubber diaphragm and bellows arrangement and permits automatic adjustment of control valves to maintain a predetermined stock level in the various compartments affected.

Instead of the conventional regulating box with orifice gates from which the stock cascades into a pipe line leading to a pump suction, special metering valves may be provided in the stock line near the point where the stock pipe goes to the pump suction. This metering valve may be motor operated by push button control from the machine room floor with an indicator to show the degree of opening of the valve. The valve of course can also be manually operated if desired. In either case the stock pipe is completely full of stock throughout its entire length and up into the regulating box which is full to the point of overflowing over the spill dam which maintains a stock level at the same height at all times.

Through suitable design of the stock pipe and metering valve as well as the regulating box the system is made largely self-compensating for any variations in consistency at the regulating box so that the weight of the sheet is held substantially constant in spite of consistency variations.

The absence of cascading of stock at the regulating box also eliminates entrainment of air and contributes toward more uniform performance.

The liquid level control instrument has also been applied as a pressure regulator on Fourdrinier head boxes capable of detecting very small variations in the head of a Fourdrinier head box. A variation of head in the matter of a fraction of an inch will transmit through the liquid level control electric impulses to the auxiliary equipment thereby automatically adjusting the speed of the flow pump or the opening of the throttling valve to maintain the liquid level or pressure with a high degree of precision and thus maintaining uniform pressure and spouting velocity at the slice.

To permit the minute adjustment of flow from a Fourdrinier pump, the synchronous drive motor of the pump has been provided with a variable speed magnetic coupling. DC excitation for the magnetic coupling is provided by a coupled excited or by an electronic rectifier and the excitation current to the magnetic coupling

is controlled automatically by the liquid level control instrument. Thus dual excitation is provided for this pump drive however at the same time this automatic control can be switched to a manually operated push button control by means of a motor operated rheostat in the control circuit.

One of our latest installations has also been equipped with a zero speed instantaneous shut off control arranged so that if the Fourdrinier wire should stop for any reason, the couch drive is instantly shut down, the new stock is shut off by a quick acting air operated valve, the flow pump drive is de-energized stopping the pump and the liquid level control or pressure regulating system is also instantly de-energized thereby maintaining its setting in the normal operating position.

Means of quickly stopping the couch roll in case the wire freezes to the suction boxes, prevents turning of the couch roll inside the wire. The instant shutting off of the stock prevents the filling up of the system with heavy stock. Equally rapid stopping of the flow pump prevents flooding the wire and in case of a head box, rapidly dumps the head box by reverse flow through the pump into the wire pit with the pump impeller rotating in reverse direction.

This instantaneous action of the zero speed switch and control circuits accomplishes the various operations many times more rapidly than could be done manually.

All in all, it is felt that these various improvements are worthy of further study by operators of both Fourdrinier and cylinder paper machines.

Technical Production of Chlorine Dioxide[1]

By GUSTAF HOLST

Translated from the Swedish
By AXEL HEILBORN
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Abstract

Investigations of the German scientist Erich Schmidt in the beginning of the 1920-ies incited the use of chlorine dioxide as a bleaching agent for cellulose and led to the first patent dealing with the production of this substance on the basis of the reduction of chlorates in the presence of a strong acid. The most important of the old processes are reviewed as well as the patents pertaining to manufacturing methods during the 1930-ies. In the beginning of the 1940-ies I. G. Farben-industrie A. G. in Griesheim and Mo & Domsjö in Sweden independently of each other worked out large scale methods of producing chlorine dioxide from chlorates dissolved in dilute sulphuric acid using sulphur dioxide as a reducing agent. The author gives a comparative account of these two systems. In this connection a brief description is given of the large plant for the manufacture of chlorine dioxide which was built in 1945 at the Husum sulphate mill on the basis of the experience gained during earlier trial operation at the Domsjö sulphite mill. A few other special methods of producing chlorine dioxide are briefly described.

I. Introduction

About 25 years ago the German scientist, Erich Schmidt, and his co-workers succeeded in isolating from different cellulosic material a "skeleton substance", so-called holo-cellulose, of unprecedented purity by the use of chlorine dioxide (ClO_2). *At the same time* the possibility was demonstrated that this oxidizing agent could be used for gentle bleaching of the cellulose fibres to a high whiteness. Since that time the specialists have increasingly turned their attention to the problem of utilizing this discovery and of developing from it a useful and economical method of bleaching (1). Investigations conducted since the latter part of the 1920's by the American firm, Mathieson Alkali Works, have shown that similar bleaching effects can be obtained in weak acid solutions of chlorites, particularly sodium chlorite ($NaClO_2$), which, in more strongly acid solutions via the free chlorous acid ($HClO_2$), spontaneously evolve chlorine dioxide (2).

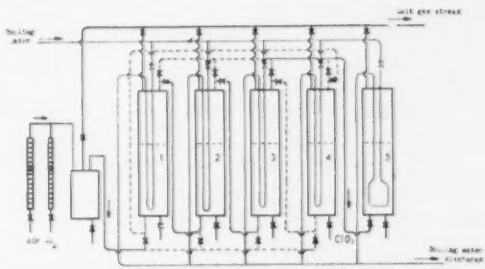


Figure 1—Layout for ClO_2 manufactured by the I. G. Farben method at Griesheim. Numerals 1 to 4, ClO_2 generators; 5, ClO_2 absorber.

II. Earlier Methods for the Production of Chlorine Dioxide. Technical Methods 1920-1940.

The explosive properties of chlorine dioxide and the risks connected with its handling and production for a long time were responsible for this substance, as well as the chemically related chlorites, being confined pretty much to the scientific laboratory. This was particularly so where there was no practical use that would justify the development of special technical methods of production. Schmidt's investigations in the beginning of the 20's undoubtedly initiated interest in this field; and as early as 1923—about simultaneously with the first patent on bleaching with chlorine dioxide—the first patent appeared for the production of chlorine dioxide (Koln-Rottweil A/G, D.R.P. 378,289). It is interesting to note

[1] Reprinted from *Svensk Papperstidning*, Nr. 20, pp. 472-477 (1947).

that already in this patent the production of chlorine dioxide was based upon a reduction of chlorates with various reducing agents in the presence of a strong acid —a principle that has been fundamental for most of the later patented methods of production. The formation of chlorine dioxide from chlorate as a raw material presupposes a primary formation of free chloric acid. Production of chlorites is almost always tied in with the formation of chlorine dioxide in a previous stage.

Both of these processes are reductions which are carried out in acid and alkaline solutions respectively, according to the following sequence:

$$\text{chlorate} \xrightarrow[\text{reduction}]{\text{acid}} \text{chlorine dioxide} \xrightarrow[\text{reduction}]{\text{alkali}} \text{chlorite}$$

A fundamental factor in the formation of chlorine dioxide is the fact that the free chloric acid formed from chlorates in acid solution does not have the tendency to be reduced as far as chlorate ions in a neutral solution which are completely reduced to chloride. A similar difference in oxidizing reactions is also found, for instance between free nitric acid and its salts. As is recognized in this case, one may obtain quite different end products (such as NO_2, NO or NH_3), depending upon acidity, concentration and kind of reducing agent.

It is well known that the free chloric acid has not been isolated in a water-free condition, inasmuch as even a 40 per cent solution (approximately 6 mol concentration) begins to break down, forming chlorine dioxide and perchloric acid. This decomposition may be considered to take place according to the following reactions, with unstable chlorous acid as an intermediate product:

$$2HClO_3 \longrightarrow HClO_2 + HClO_4$$
$$HClO_2 + HClO_3 \longrightarrow 2ClO_2 + H2O$$
$$3HClO_3 \longrightarrow 2ClO_2 + HClO_4 + H2O$$

These reactions will result in only 66 per cent of the theoretically possible chlorine dioxide.

Davy, Gay-Lussac, and Millon, in the beginning and middle of the 19th century, used these reactions for their original classical method to produce chlorine dioxide from solid potassium chlorate and concentrated sulphuric acid. Also, certain patented processes from as late as the 1920's and 30's used the reaction between a solid chlorate and concentrated sulphuric acid applying certain precautionary measures in which, for instance the solid chlorate is mixed with inactive inorganic substances and then added in small portions to the concentrated sulphuric acid. (Becher, D.R.P. 517,755; Deutsche Gold—and Silberscheideanstalt, D.R.P. 669,383.) The chlorine dioxide which is formed and dissolved in the reaction mixture is driven out by a stream of air, and in this way a diluted, non-explosive gas mixture of chlorine dioxide and air is obtained.

Many years ago, while producing chlorine dioxide in the laboratories, attempts were made to avoid the rapid reaction obtained between chlorate and concentrated sulphuric acid, by partly or completely exchanging this acid with other relatively strong acids which simultaneously act as reducing agent. These trials resulted in a classical method in which crystalline oxalic acid, in the presence of variable amounts of water and sometime sulphuric acid, is brought to react with the solid chlorate. This reaction, requiring increased temperature to get started at a sufficient rate, is characterized by a smoother performance because unstable chloric acid is not released and concentrated at such a rate that spontaneous decomposition thereof is obtained. This process results in a gaseous mixture of chlorine dioxide and carbonic acid. The above method of production, already mentioned in the first patent for chlorine dioxide production of 1923, was also patented in modified form in 1936 in a French patent (Leseurre 806,187), and it would appear that a chlorine dioxide yield of 75 per cent on the basis of chlorate consumed can be obtained. This method, however, has never found practical use on account of the large consumption of high-priced oxalic acid. The same is evidentally true also for a process using the medium strong formic acid which in concentrated solution gives a good yield of chlorine dioxide when reacted with chlorate. Instead of the organic acids mentioned, the much cheaper hydrochloric acid has found a more important use in the technical production of chlorine dioxide. The acid may be used either as such or be generated through the action of sulphuric acid upon a chloride. The hydrochloric acid then acts as a reducing agent upon the liberated chloric acid, and the HCl is then oxidized to free chlorine which is evolved together with the chlorine dioxide.

About 40 years ago, Luther and MacDougall (3) studied thoroughly the physico-chemical reaction of hydrochloric acid with water solutions of chlorates, and it was found that the ratio of the chlorine dioxide and chlorine, and hence the yield of chlorine dioxide, depends upon the concentrations of chlorate, chloride, and acid in the solution. However, not until a quarter century later, in the beginning of the 1930's, was this reaction made the subject of technical developments of the Mathieson Alkali Works, as evidenced by several patents. Also, one English patent No. 510,678 by *Evans*, 1939, describes chlorine dioxide production through reduction of chlorate with hydrochloric acid in water solution. This patent appears independent of the above firm.

Mathieson's patents discuss mainly the separation of the chlorine dioxide from the simultaneously formed chlorine obtained in the gases which are formed through the reaction between hydrochloric acid and chlorate, or between sulphuric acid and chloride-chlorate mixtures, in concentrated solutions. Several selective physical and chemical methods have been worked out therein for the absorption of chlorine and chlorine dioxide. Among these methods may be emphasized a continuous method of production (U. S. patent 2,078,045), according to which the chlorine-containing chlorine dioxide gases are freed from chlorine by absorption in slack lime. The practically chlorine-free chlorine dioxide can then be used for production of pure chlorites. For the bleaching of cellulose, for instance the finishing bleaching step of kraft pulp, it is, however, not always necessary to seperate the gases. One can often, without disadvantage, work with chlorine-containing chlorine dioxide gases having a Cl_2:ClO_2 molecular ratio as high as 1:1. It would appear as if a production of chlorine dioxide according to such a method may, with certain advantages, be tied into a chlorine alkali electrolytic plant, in which, for instance, calcium chlorate is produced through complete chlorination of milk of lime with chlorine gas from the cell room and hydrochloric acid is made through combustion of the hydrogen with chlorine gas. The by-product sodium hydroxide has normally such a value that the cost of production of chlorine dioxide to a large extent could be covered by the sale of the alkali.

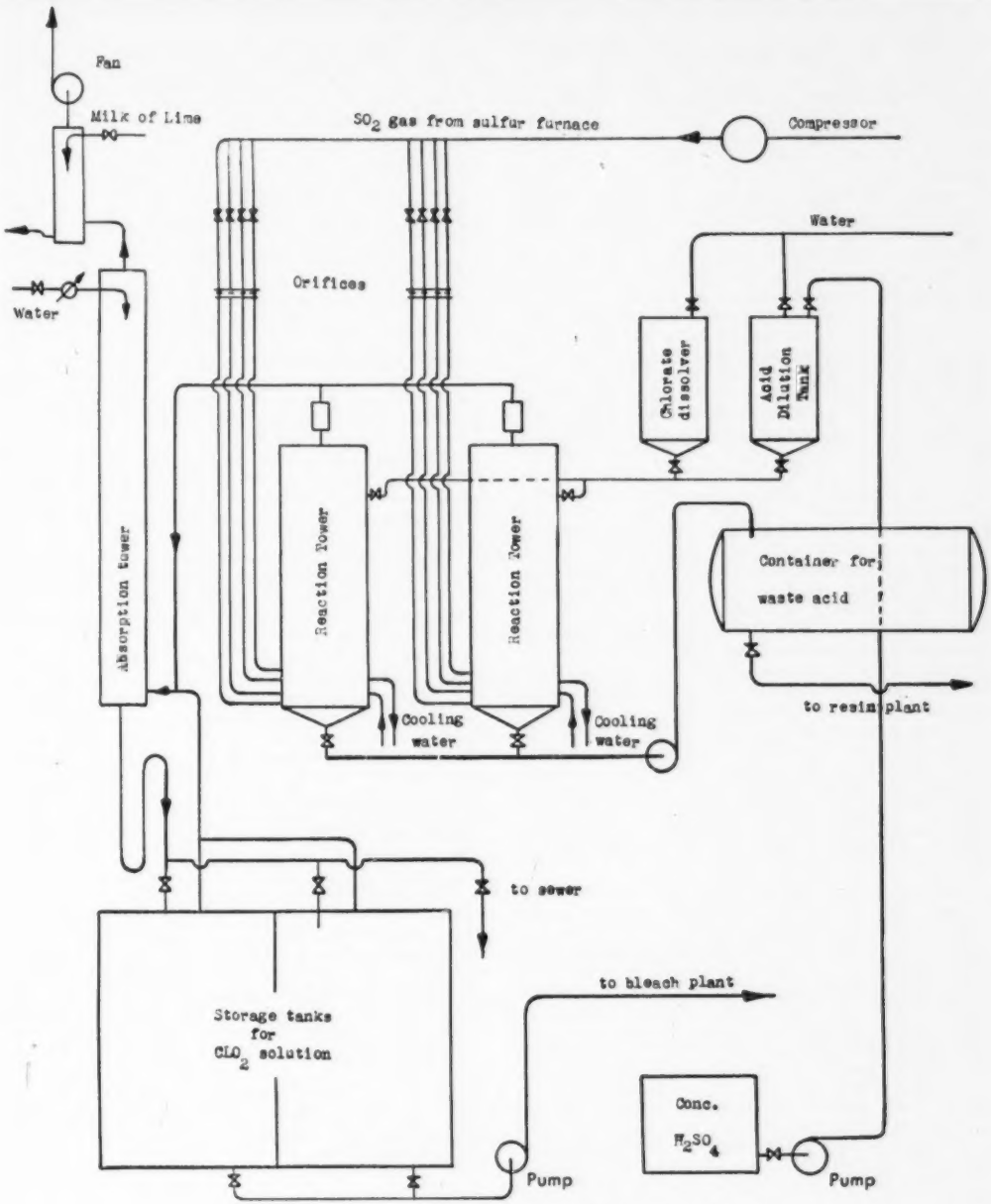


Figure 2—Layout for the production of chlorine dioxide at Husums Sulfatfabrik.

On account of the large amounts of chlorides obtained when the lime is completely chlorinated, the solution formed from the decomposition of the chlorate in acid solution will contain an undesirably high concentration of chloride whereby a lower yield of chlorine dioxide is obtained. The chlorine dioxide gases formed will thus contain too high a content of chlorine advantageously to be used directly for final bleaching of cellulose.

III. Technical Production of Chlorine Dioxide from Chlorates with Sulphur Dioxide as the Reducing Agent.

About ten years ago, Mathieson Alkali Works patented in the United States (No. 2,089,913) a method for production of chlorine dioxide. This process is founded on the use of sulphur dioxide as a reducing agent by reacting it with a concentrated solution of chlorate. Strangely enough, the inventor of this method completely overlooked the fundamental importance which the presence of free acid in sufficient concentration has on the formation of chlorine dioxide, and as a result, a process according to said patent would not be economically feasible on account of the low yield (about 50 per cent based on the consumed chlorate).

Not until the beginning of the 1940's did the problem of using sulphur dioxide as the reducing agent for the production of chlorine dioxide from chlorates find a technically and economically satisfactory solution. This was made possible by adding a relatively high concentration of sulphuric acid to the chlorate solution before the reaction with sulphur dioxide. The following formula gives the main process:

$$HClO_3 + ClO_3^- + SO_2 \longrightarrow HSO_4^- + 2ClO_2$$

Independently of each other, *I. G. Farbenindustrie A.-G.* in Germany, and Mo and Domsjö A.-B. in Sweden, worked out technical processes of manufacture (4), for which applications for patents have been filed and have already been granted in several countries. Their method has also found use on an industrial scale. (Compare, for instance, Swiss patent 231,250 to I. G. Farben, and U. S. patent 2,373,830 to Holst.) By working with a chlorate-sulphuric acid-water solution of highest possible concentration with respect to both chlorate and acid, it is possible to obtain a very high yield of chlorine dioxide by the use of sulphur dioxide, in which case as high as 90 per cent of the chlorate is efficiently utilized. The evolved chlorine dioxide is practically free from chlorine and by working with SO_2-containing combustion or smelter gases having 10 to 15 per cent SO_2, a diluted, non-explosive ClO_2 gas of corresponding concentration can be obtained.

The reaction mechanism, when chlorine dioxide is formed from the reaction of sulphur dioxide with the acid chlorine dioxide-containing chlorate solution, is very complicated. It has the character of an auto-catalytic reaction, the optimum conditions of which have been largely clarified through thorough physico-chemical investigations (5). The industrial equipment for carrying out the process can be designed in different ways and be very simply constructed without lowering the yield of chlorine dioxide. In this manner, for instance, the principle of the "mammut pump" (circulation by means of air in a draft tube) for the dispersion of the gas and for the circulation of the liquid has been utilized to great advantage, and a factory installation built according to this principle has been in continuous use since the summer of 1946 at Mo and Domsjö A.-B. in their Husums Sulfat-fabrik.

A brief comparison between the German and the Swedish methods of manufacture ("Griesheim" vs. "Domsjö" process) would be of interest in this connection. With regard to the chemistry of the processes, no essential difference exists. In both cases, sodium chlorate and sulphuric acid in water solution are used as raw materials. However, the ratio of acid to chlorate seems to be a little higher in the Domsjö process and the chlorine dioxide evolution is produced by conducting a flow of diluted SO_2 gas into the mixture.

According to my own investigations, at normal temperature and maximum chlorate concentration (3.0-3.5 mol/liter $NaClO_3$) the optimum acid concentration seems to be between 7 and 8 gram equivalents per liter, and at Domsjö and Husum we have considered it most suitable to permit the process to operate at an average temperature of about 30°C. While I. G. Farben had their trial installation at Griesheim working at a reaction temperature of 40-50°, this latter was accomplished by driving the reaction with sulphur dioxide more forcefully, and by using in general a little higher SO_2 content of the incoming gases, resulting in a rise in temperature. In that way a higher chlorate concentration (more than 4 molar) can be used in the starting solution but only with a lower ratio of acid to chlorate. At the same time there is also undoubtedly certain risk of precipitation of sodium acid sulphate in case the temperature for some reason should drop.

In the Griesheim factory, the production of chlorine dioxide was combined with the manufacture of sodium chlorite, whereas at Husums the chlorine dioxide produced was absorbed in water and used directly for bleaching of cellulose.

The following data regarding the Griesheim process are taken from the British Intelligence Objectives Sub-Committee in their report published in 1946: "Fiat Final Report No. 825: Chlorine Dioxide and Sodium Chlorite at I. G. Farben, Griesheim".

Sodium chlorite was produced according to two different methods, and in both cases ClO_2 was produced by introducing a mixture of SO_2 and air in a mixture of sodium chlorate and approximately 40 percent sulphuric acid. In one case the chlorine dioxide was absorbed in NaOH and H_2O_2 whereas in the second case fine zinc dust suspended in water was used as the reducing agent which forms the difficultly soluble zinc chloride ($Zn(ClO_2)_2$ with the chlorine dioxide. This salt is then reacted with NaOH in water solution forming a sodium chlorate solution which, after filtration, evaporation, and drying, gives a solid sodium chlorite.

In the pilot plant which was used during the war, and which, according to information, produced 4 tons of sodium chlorites per month, corresponding to about 100 kilograms ClO_2 per day, there were four ClO_2 generators installed. Each reaction vessel had a height of 2 meters, an internal diameter of 0.25 meters, and a capacity of 60 liters. They were made from stoneware and from iron lined with "Vinidur" (polyvinyl chloride) and were equipped inside with cooling coils of 1.8 meters in length and .2 square meters in surface area. The required cooling is given as 3000 kilogram calories per hour. The material of these coolers was so-called "Heschotherm", which is silicon carbide ceramic material with high heat-transfer co-efficient.

A schematic drawing of the ClO_2—producing equipment is shown in Fig. 1, which also shows one of the two series-connected absorption vessels for ClO_2.

The reaction vessels #1 to #4 are each charged with 30 kilograms of $NaClO_3$ followed by 43 liters of cold sulphuric acid (557 grams per liter, density=1.322), approximately corresponding to half the content of the vessels.

When starting up the equipment, the ClO_2 generators #1 to #3 are connected in series, while generator #4

is by-passed. The flows of compressed air and SO_2 are regulated so that a mixture of 10 cubic meters of air and 4.5 kilograms of SO_2 are added per hour. The reaction temperature is kept at 40—50°C by means of cooling water (light lines in Fig. 1). The gas stream, shown as heavier lines, then passes in series through generators #1, #2 and #3 to the absorption tower #5. When the ClO_2 evolution in generator #1 has stopped, this one is disconnected and #4 is connected in series instead, so that the gas now successively flows through the vessels #2, #3, and #4. Vessel #1 is now emptied, washed out, and recharged so that when generator #2 has finished producing, it is in turn by-passed and #1 is put into operation following #4, so that the gases flow through generators #3, #4, and #1. Each generator is by-passed in turn and in that way a practically continuous evolution of gas is maintained.

Four and one-half kilograms of SO_2 corresponds approximately to 1.7 cubic meters of gas at 20°C and atmospheric pressure, which in a mixture of 10 cubic meters of air gives a content of approximately 14 percent SO_2 in the incoming gas mixture.

From a calculation of the material balance, it can be shown that 10 kilograms of $NaClO_3$ and 4.5 kilograms of SO_2 will give 5.5 kilograms of ClO_2 per hour, corresponding to about 1.9 cubic meters of gas at 20°C and atmospheric pressure, or an average content of approximately 16 percent ClO_2 in the exit gas. The amount of chlorine dioxide produced corresponds to a yield of 87 percent calculated on consumed chlorate, and the mol relation between the ClO_2 formed and the simultaneously consumed SO_2 is 1.12.

According to information, 0.3 kilograms of ClO_2 and 0.1 kilograms HCl are formed at the same time; that is, about 10 perecnt of the chlorine content of the sodium chlorate is recovered as gaseous chlorine in mixture with chlorine dioxide, while only about 3 percent appears as HCl in the spent liquor after the completion of the reaction.

In the Griesheim process, each chlorine dioxide generator is charged with amounts of chlorate and acid such that all the sodium chlorate cannot be brought into solution at the high concentration of the acid. The chlorate gradually goes into solution as the temperature increases to 40—50°C, due to the heat evolved from the reaction with sulphur dioxide.

The full scale installation at Husums Sulfat-Fabrik (Fig. 2) constructed and calculated by U. Ekman has a production (equal to 3800 kilograms of chlorine dioxide) per day. It contains two reaction towers working alternately. One is being filled while the other is in operation. Both however, could be in operation simultaneously part of the time, inasmuch as the production of 5000 kilograms of active chlorine per day requires almost two days for finishing the solution in one tower, whereas the refilling can be done in a few hours. When the demand for chlorine dioxide is considerably lower than the capacity of the installation, only one reaction tower is in operation at a time.

This installation is based on a pilot plant at Domsjö which had a production capacity of about 500 kilograms of available chlorine per day, representing the last of a series of three separate experimental installations, and which was constructed with the intention of obtaining the simplest possible installation combined with ease of operation while maintaining a high yield of chlorine dioxide. The reaction vessel in this pilot plant was a 5.25 meter high stoneware tower in which was placed a vertical, open draft tube of stoneware. This pipe had a height of 4.5 meters and an inside diameter of .225 meters, and immediately below it was placed a perforated lead coil of a somewhat smaller diameter. A cooling coil of lead was also present. The reaction solution (about 3 mols per liter $NaClO_3$ and 7 gram equivalents per liter H_2SO_4) was filled to the top of the draft tube, and SO_2 gas was introduced through the perforated lead coil. In this construction, where the liquid is circulated by means of the principle of the "mammut pump", a powerful and efficient liquor circulation is accomplished, avoiding all moving parts such as agitators or circulating pumps.

The reaction towers at Husum contain approximately 20 cubic meters of liquid and are charged with an approximately equal volume of .6 molar sodium chlorate solution and 50 percent sulphuric acid. The solution at the start is thus approximately 3 molar with respect to chlorate and 7 to 8 normal with respect to sulphuric acid. Combustion gases containing 10 to 15 percent SO_2, from a sulphur furnace, are introduced in the bottom of each reaction tower below a number of draft tubes. The sulphur dioxide then reduces the chlorate, forming chlorine dioxide and small amounts of hydrogen chloride and free chlorine. The reaction temperature is kept at about 30°C by means of a cooling coil, and the rate of ClO_2 production is regulated by means of the added SO_2. If the production is to be discontinued, the supply of SO_2 is simply cut off. When all chlorate is used up, the chlorine dioxide still remaining in solution is reduced with an excess of sulphur dioxide, so that chlorine dioxide will not enter the building where the waste acid is used.

The chlorine dioxide gas formed is introduced in the bottom of an absorption tower where it is absorbed in cold water. The ClO_2 losses in the waste gases are less than one percent but in order to avoid contamination of the air in the neighborhood during unfavorable weather, an extra absorption tower has been installed in which the chlorine dioxide is completely absorbed in milk of lime. This absorption tower is followed by a fan which produces a light suction on all the equipment and vessels containing chlorine dioxide. In that way leakage of the gases into the building is avoided. The chlorine dioxide solution from the absorption tower is collected in two storage vessels, whence it is pumped to the bleach plant. The spent reaction solution, free from chlorine dioxide, is pumped to another container and flows from there to the resin department of the sulphate mill where all waste sulphuric acid is utilized. The ClO_2 yield, figured on chlorate consumed, has on an average amounted to about 90 percent and the content of available chlorine in the chlorine dioxide solution going to the bleach plant has been 16—17 grams per liter.

From both technical and economical viewpoints, this manufacturing method thus seems to represent a very satisfactory solution of the problem of producing chlorine dioxide for bleaching of kraft pulp in a modern sulphate cellulose mill. This is particularly true as the stronger acid waste solution can be completely utilized for the production of so-called liquid resins, an advantage which evidently did not exist in the experimental chlorite plant at Griesheim.

Finally, I would like to mention that a few additional specific methods of producing chlorine dioxide

have appeared during the last few years, of which two are founded on the use of certain metal salts in their lower stages of oxidation, for instance, salts of chromium, used as the means of reducing the chlorate solution at a high temperature (60—90°C). See, for instance, Mathieson Alkali Works U.S.P. 2,172,434, and S. H. Persson, U.S.P. 2,376,935. I do not know to what extent these methods of manufacture, requiring a regeneration of the costly metal salt, have become technically important, and what experiences have been encountered. The same is true about the Finnish method worked out by Sevón at Kymmene Aktiebolag in Finland, which has been partly described by him (6). He has tried the reaction between solid chlorate and gaseous sulphur dioxide in the presence of small amounts of water.

So far as I can judge, neither of these methods compares with the Griesheim and Domsjö processes with respect to technical simplicity and successful operation in combination with high yield of chlorine dioxide.

Literature

1. Compare Swedish Patent No. 118,790, *Korsnäs Sågverks A/B*, "Method for bleaching of cellulose-containing fibrous material."
2. The properties and reactions of sodium chlorite. A new commercial oxidizing and bleaching agent, by M. C. Taylor, J. F. White, G. P. Vincent and G. L. Cunningham, *Ind. Eng. Chem.* (1940), 32, 899. Compare also G. Holst, *Svensk Papperstidning* n4, 2, 1945.
3. R. Luther and F. H. MacDougall, *Z. phy. Chem.* 62 (1908), 189.
4. G. Holst, *Svensk Papperstidning* 47 (1944), 537-46.
5. G. Holst, *Svensk Kemisk Tidskr.* 56 (1944), 369-91.
6. J. Sevón, *Kemian Keskuslitton Julkaisuja*, 10, nr. 7, 1945.

INDUSTRIAL PRODUCTION, BY INDUSTRIES

(Without Seasonal Adjustment)

Source: Federal Reserve Bulletin, August, 1948

[Index numbers of the Board of Governors, 1935-39 average = 100]

Industry	1947 Oct.	Nov.	Dec.	1948 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Paper and Paper Products	*163*	*165*	*157*	*163*	*163*	*167*	*169*	*170*	*165*	*149*	*165*	*165*	*172*
Paper and pulp	157	160	152	157	159	160	163	164	160	145	160	159	167
Pulp	177	182	168	174	178	179	182	188	183	170	r 191	181	194
Groundwood pulp	97	103	97	91	98	96	107	112	107	104	107	103	109
Soda pulp	107	112	107	109	110	103	108	112	111	96	110	107	111
Sulphate pulp	275	281	255	276	269	285	293	309	301	283	328	301	330
Sulphite pulp	154	159	148	151	161	153	151	151	146	135	r 148	145	153
Paper	154	156	150	155	156	157	160	160	156	141	155	156	163
Paper board	184	186	177	187	179	192	192	191	187	165	184	189	193
Fine paper [1]	89	89	86	86	88	85	87	86	86	74	83	83	...
Printing paper	167	168	162	162	170	161	166	169	168	150	160	161	172
Tissue and absorbent paper	154	158	153	161	167	161	173	169	600	153	161	163	172
Wrapping paper	141	146	139	145	150	148	151	150	145	135	r 153	148	157
Newsprint	91	91	87	82	83	82	91	95	95	91	95	93	96
Paperboard containers (same as Paperboard)	...	...	...	...	...	...	...	...	...	...	...	...	...

r Revised. [1] This series is in process of revision.

Note.—For description and back figures, see Bulletin for October, 1943, pp. 940-984; September, 1941, pp. 878-881 and 933-937; and August, 1940, pp. 753-771 and 825-882.

HOURS AND EARNINGS OF PRODUCTION WORKERS IN MANUFACTURING INDUSTRIES

[Compiled by the Bureau of Labor Statistics]

Industry Group	Average Hours Worked per Week 1947 Aug.	Sept.	1948 May	June	July	Aug.	Sept.	Average Hourly Earnings (Dollars) 1947 Aug.	Sept.	1948 May	June	July	Aug.	Sept.
All manufacturing	*39.8*	*40.4*	*39.9*	*40.2*	*39.8*	*40.1*	*39.8*	*1.236*	*1.249*	*1.301*	*1.316*	*1.332*	*1.349*	*1.362*
Durable goods	*40.0*	*40.6*	*40.1*	*40.5*	*40.0*	*40.7*	*40.0*	*1.312*	*1.331*	*1.366*	*1.385*	*1.407*	*1.431*	*1.450*
Nondurable goods	*39.5*	*40.2*	*39.6*	*39.8*	*39.5*	*39.5*	*39.6*	*1.158*	*1.165*	*1.230*	*1.242*	*1.252*	*1.262*	*1.271*
Paper and allied products	42.4	42.9	42.8	42.8	42.5	43.2	42.7	1.196	1.210	1.269	1.292	1.317	1.320	1.335

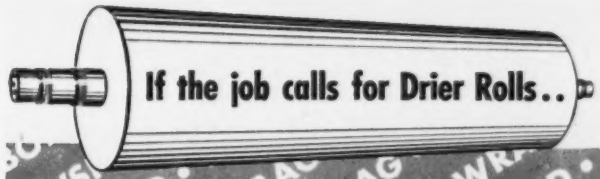
Note.—Preliminary October, 1948, figures for average weekly hours and hourly earnings are: All manufacturing, 40.0 and 1.366; Durable, 40.9 and 1.453; Nondurable 39.0 and 1.272, respectively. Back figures are available from the Bureau of Labor Statistics.

FACTORY EMPLOYMENT AND PAY ROLLS, BY INDUSTRIES

(Without Seasonal Adjustment)

[Index numbers of the Bureau of Labor Statistics, 1939 = 100]

Industry Group or Industry	Factory Employment 1947 Sept.	Oct.	1948 June	July	Aug.	Sept.	Oct.	Factory Pay Rolls 1947 Aug.	Sept.	1948 Oct.	June	July	Aug.	Sept.
Paper and Allied Products	*146.2*	*147.8*	*146.9*	*146.1*	*147.4*	*148.7*	*149.4*	*307.2*	*315.5*	*320.5*	*337.8*	*341.7*	*349.6*	*352.5*
Paper and pulp	145	145	148	149	150	150	....	317	322	323	348	358	364	363
Paper goods, n.e.c.	163	167	164	160	156	158	....	314	334	344	358	355	347	354
Paper boxes	139	142	134	131	137	140	....	280	292	304	305	295	319	328



If the job calls for Drier Rolls..

A SURVEY OF 32 MILLS SHOWS

Lukenweld Drier Rolls are at work with every type of paper

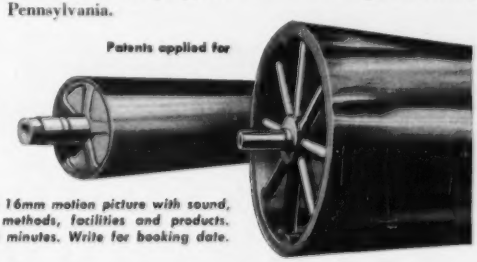
High pressures safely employed with Lukenweld Drier Rolls can be used to boost surface temperatures. "What does that mean when we're working with thinner papers?" millmen have asked. The answer is, Lukenweld Drier Rolls are being successfully used in producing every type of paper listed here. And their users come back for more, time after time.

Lukenweld Jacketed Steel Drier Rolls help speed up production—positive scavenging of steam passages flushes out air and condensate, assuring high efficiency. Product quality is higher because surface temperatures are more uniform and constant. Simple in construction, there's nothing to get out of order; can be designed without bolts, nuts or siphons to work loose in service.

In Chemical, Drug, Food and Plastics work, too

Lukenweld Drier Rolls are serving similarly here—crystallizing drugs and chemicals by heating or chilling, drying or freezing foodstuffs. The ability to transfer heat quickly and evenly provides the same economic advantages to these industries.

If your drying problem can be solved by drier rolls, let our engineers help you select the Lukenweld Rolls to handle it; any diameter, 24 inches or 18 feet—lengths to suit each task—plain steel, polished or plated surfaces, or any of the Lukens corrosion-resistant clad steels. Write Lukenweld, Division of Lukens Steel Company, 403 Lukens Building, Coatesville, Pennsylvania.



"LUKENWELD", a 16mm motion picture with sound, highlighting our methods, facilities and products. Running time: 20 minutes. Write for booking date.

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DESIGNERS, ENGINEERS AND MANUFACTURERS OF MACHINERY

• • SPEED SCRAP TO THE MILLS TO MAKE MORE STEEL • •

Trends

Office of the PAPER TRADE JOURNAL,
Wednesday, January 5, 1949.

Wood Pulp

Describing the movement of stock prices during 1948, a New York Times writer used the pattern of the nursery rhyme where Jack and Jill went up a hill and then came tumbling down. This same figure was used by this column—issue of December 2—to report that Jack had reduced his wood pulp prices and others were tumbling after him. From this week's reports, it appears the slope is not too steep yet fairly long; the end is not yet. Domestic and Canadian first quarter prices are by this week quite well established at known levels. Canadian prices reflect little change beyond increases from partial to full allowances. Fourth quarter prices are sustained by the Finns. Other Norwegian mills have dropped the price of Bleached Sulphite from $165.00 to $140.00, which is reported as the accepted price. No one statement can be made to represent the Swedish producers as a whole, however. Swedish Bleached Sulphate, announced at $165.00 per short ADT for fourth quarter, eased to $150/155.00 but is said to be available at $140.00. Bleached Sulphite, also priced at $165.00 for fourth quarter contracts,' now is openly offered at $140.00 by one importer and is said to be fluctuating around that figure in other directions. Although no general announcement is expected before open water sometime in mid-April, the pressure of the situation can be expected to precipitate matters.

1948 Price Movement

Movement of wood pulp prices from January, 1948 to December 31 is shown in Table I to IV, herewith.

Paper Market Prices

It will be noted from Tables I to IV that the marked price changes are coming in Scandinavian pulp, little of which is currently needed to meet U.S. consumption requirements. The gradual adjustments which may come in domestic and Canadian wood pulp prices as the supply exceeds demand are seen as a boon to non-integrated mills which are being pressed to meet competition of integrated mills. No changes in paper prices are seen as likely in the near future, except perhaps where overstocks compel movement at close margins.

Announcements of reductions in paperboard prices January 1 bring Filled News to $82.50 per ton from $94, Plain Chip to $80 from $90, reflecting softened waste paper prices of the last several months. No further reductions are indicated.

Manufactures

With ample kraft wood pulp now available, easing of the tight supply of kraft items is expected. Immediate relief is seen delayed by increased national demand which is said to have risen more than 250 percent over the 1935-39 average. Kraft wrapping paper supply is reported to show marked improvement, though still shipped to dealers on an allotment basis. Demand is said to be slightly over supply, the gray market to have been replaced by "oyster white" with "virgin white" just around the corner. Multi-wall bag stock is freely available on a buyers' market.

Towels are scarce items, some brands being almost unobtainable in some areas. Tissues are in better supply, also sulphite wrappings. High grade toilet tissues are reportedly short in the Pacific Northwest. Regular grades are in good supply. Facial tissue, now a glut on the market, could now be diverted to toilet tissue. Dealers, however, report customers shopping for price and value.

Estimated paperboard production for 1948 shows an increase of 5.9 percent with major growth in corrugated containers, building boards on a steady upward trend, folding box in good demand, with a leveling off in some other categories.

Indexes

Index of general business activity for the week ended December 25 dropped 152.9 from 155.4 in the preceding week, compared with 147.7 in the corresponding week of 1947.

Index of paperboard production rose to 199.0 from 195.1 in the preceding week, compared with 166.8 in the corresponding week of 1947.

Comparative ratios of U.S. paper and paperboard production to mill capacity, as reported by AP&PA are:

	Dec. 25 1948	Dec. 18 1948	Dec. 27 1947	Dec. 28 1946	Dec. 29 1945
Paper**	74.6	‡95.9	74.9	71.8	60.8
Paperboard	87.0	96.0	77.0	66.0	52.0

** Indicates 1948 volume of 134,773 tons. Comparable week, 1947, 118,704 tons. ‡ Revised figure.

Paperboard Production (Tons)

	Dec. 25 1948	Dec. 18 1948	Dec. 27 1947
Production	174,319	194,508	126,659
New Orders	139,128	155,499	114,444
Unfilled Orders	285,601	324,804	406,738

Percent of Activity, Current, 87%; Year, 95%.

Table I
U. S. Prices, 1948

	Jan. 1948	Oct. 1	Dec. 31
Groundwood	$80.00/ $81.00	$80.00/ $81.00	$80.00/ $81.00
Unbleached Sulphite	125.00/ 126.00	124.00/ —	118.00/ —
Bleached Sulphite	135.00/ —	125.00/ 135.00	126.00/ —
Bleached Soda	125.00/ 130.00	130.00/ 135.00	130.00/ —
Bleached Sulphate	175.00/ 185.00	155.00/ 165.00	136.00/ 145.00
Unbleached Sulphate Northern	125.00/ 132.50	120.00/ 130.00	115.00/ 125.00
Unbleached Sulphate, Southern	125.00/ 132.50	110.00/ 125.00	105.00/ 115.00

Table II
Canadian Prices, 1948

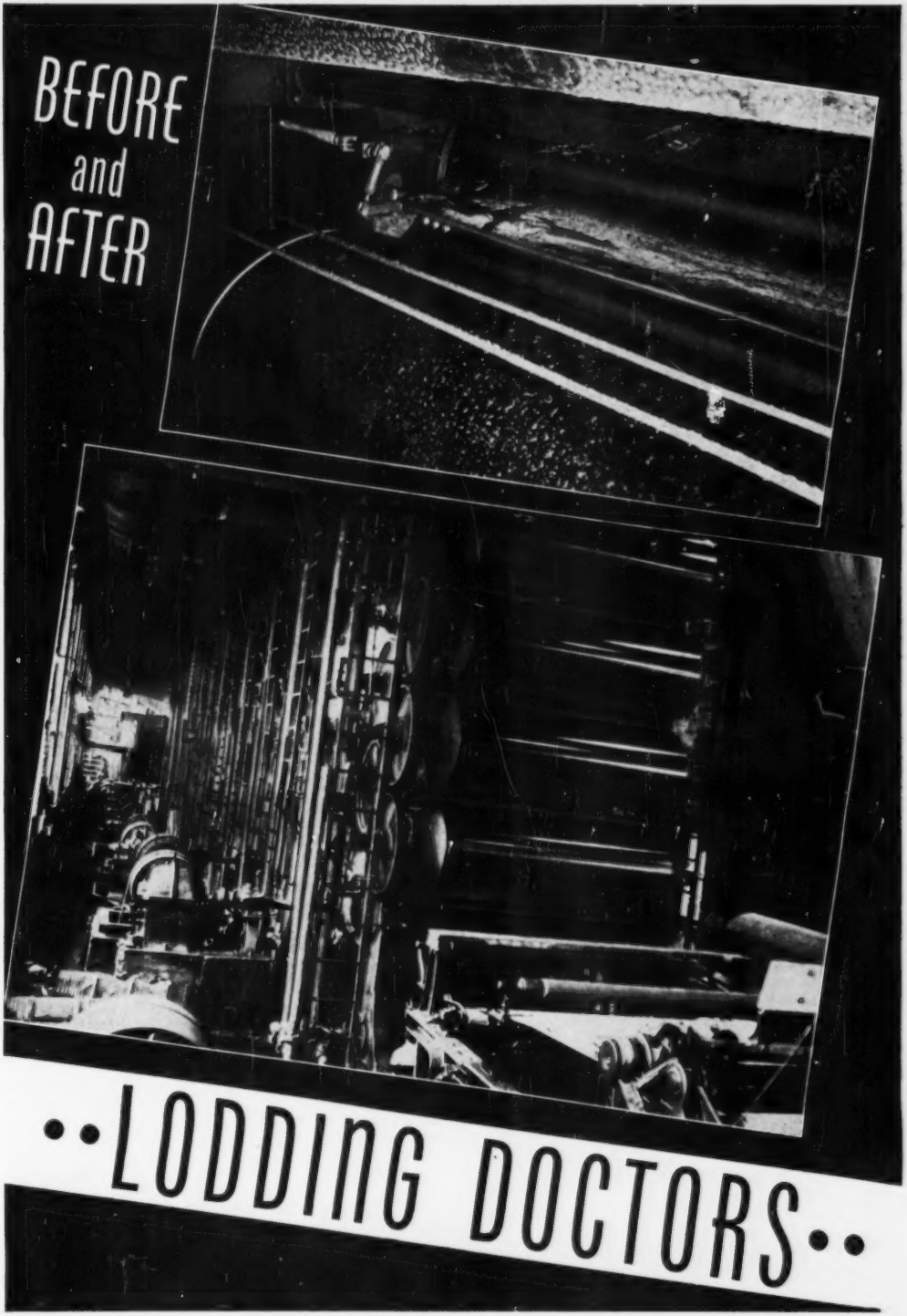
	Jan. 1	Oct. 1	Dec. 31
Groundwood	$80.00/ $85.00	$80.00/ $85.00	$80.00/ $81.00
Unbleached Sulphite	125.00/ 126.00	125.00/ 126.00	125.00/ —
Bleached Sulphite	135.00/ —	125.00/ 135.00	135.00/ —
Glassine Unbleached	120.00/ —	120.00/ —	125.00/ 130.00
Sulphite	(no freight allowed)	(no freight allowed)	(full freight)
Bleached Soda	130.00/ —	130.00/ —	130.00/ —
Siderums Pulping News	80.00/ —	80.00/ 90.00	80.00/ 81.00
Unbleached Sulphate	125.00/ —	125.00/ 135.00	110.00/ 125.00
Bleached Sulphate	— / —	150.00/ 160.00	147.50/ 150.00

Table III
Swedish Prices, 1948

	Jan. 1	Oct. 1	Dec. 31
Bleached Kraft	$175.00/$185.00	$165.00/ —	$140.00/$165.00
Bleached Sulphite	175.00/ 185.00	165.00/ —	140.00/ 165.00
Unbleached Sulphite	157.50/ 175.00	140.00/ 149.00	140.00/ 143.00
Unbleached Kraft	140.00/ 165.00	127.50/ —	127.50/ —

Table IV
Finnish Prices, 1948

	Jan. 1	Oct. 1	Dec. 31
Bleached Sulphite	$185.00/ —	$165.00/ —	$165.00/ —
Unbleached Sulphite	155.00/ 157.00	140.00/ 143.00	140.00/ 143.00
Unbleached Sulphate	147.50/ —	127.50/ —	127.50/ —


BEFORE
and
AFTER
••LODDING DOCTORS••

Imports

Week Ending Jan. 1

NEW YORK

Newsprint

N. Y. Post, Molda, Rouen, 676 rolls.
Malmar Paper Co., Netherlands Victory, Trieste, 20 rolls.
Montmorency Paper Co., Penelope, Botwood, 7752 rolls.
Montmorency Paper Co., Sandra, Botwood, 2673 rolls.
N. Y. Journal American, Markland, Liverpool, N.S., 701 rolls.
N. Y. Herald Tribune, Markland, Liverpool, N.S., 1843 rolls.
N. Y. World Telegram, Markland, Liverpool, 439 rolls.
Brooklyn Eagle, Markland, Liverpool, N.S., 685 rolls.
Herald Statesman, Inc., Markland, Liverpool, N.S., 42 rolls.
Washington Post, (Alexandria, Va.), Markland, Liverpool, N.S., 2852 rolls.
Alexandria Gazette, (Alexandria, Va.), Markland, Liverpool, N.S., 25 rolls.
Washington Daily News (Alexandria, Va.), Markland, Liverpool, N.S., 330 rolls.
News Syndicate Co., Colabee, Baie Comeau, 5525 rolls.
Clinton Paper Corp., Tudor Prince, Cornerbrook, 801 rolls.
N. Y. Sun, Tudor Prince, Cornerbrook, 91 rolls.
Wall Street Journal, Tudor Prince, Cornerbrook, 129 rolls.
Gilman Paper Co., Tudor Prince, Cornerbrook, 133 rolls.
N. Y. World Telegram, Tudor Prince, Cornerbrook, 977 rolls.
Bato Co., Inc., Tudor Prince, Cornerbrook, 247 rolls.

Wrapping Paper

Whitehall Shipping Co., Agwistar, Vera Cruz, 3 cs.

Serviettes

A. C. O. Leather Goods Co., Rattler, Hamburg, 52 bls.

Paperhangings

C. A. Haynes Co., Rattler, London, 60 bls., 2 cs.

Wallpaper

R. F. Downing & Co., Washington, Havre, 7 cs.

Drawing Paper

Lansen Naeve Co., Washington, Havre, 2 cs.
Natural Nydegger, Nieuw Amsterdam, Rotterdam, 1 cs.

Raw & Baryta Coated Paper

Ansco Corp., Afoundria, Bremen, 2 cs.

Photo Paper

I. J. Gavin Co., Mauretania, Southampton, 8 cs.

Rags, Baggings, Etc.

A. de Vries Trading Corp., Abbedyk, Rotterdam, 90 bls. old scrap bagging.
I. Eisenberg & Son, Agwistar, Tampico, 32 bls. rags.
A. de Vries Trading Corp., Rattler, Havre, 40 bls. rags.
E. J. Keller Co., Inc., Exhibitor, Port Said, 38 bls. rags.
J. H. Schroeder Banking Corp., Stavelot, Antwerp, 88 bls. cotton waste.
E. J. Keller Co., Mohamed Ali El Kebir, Naples, 56 bls. heavy bagging, 92 bls. old light hessian bagging, 101 bls. bagging, 45 bls. old colored hessians, 74 bls. old jute tentage.
(———), Mohamed Ali El Kebir, Naples, 81 bls. bagging.
Guaranty Trust Co., Mohamed Ali El Kebir, Naples, 84 bls. white cotton rags.
E. J. Keller Co., Inc., Crux, Antwerp, 125 bls. old jute bagging, 66 bls. old bagging.
J. J. Rozendaal, Crux, Antwerp, 154 bls. cotton waste.
(———), Crux, Antwerp, 50 bls. scrap bagging.
Royal Manufacturing Co., Crux, Antwerp, 100 bls. cotton waste.
(———), Hastings, Antwerp, 54 bls. bagging.
National Bank Detroit, Emma Bakke, Antwerp, 77 bls. rags.
State Street Trust Co., Netherlands Victory, Trieste, 123 bls. bagging, 64 bls. waste rags.
E. J. Keller Co., Inc., Molda, Havre, 65 bls. cotton rags.

Old Rope

(———), Exhibitor, Calcutta, 65 bls. old hemp rope cuttings.
(———), Maidan, Calcutta, 602 bls. old hemp rope cuttings.

Gluestock

H. Remis, Agwistar, Vera Cruz, 461 bdls.
Darmstadt Scott & Courtney, Agwistar, Tampico, 150 bls.
Irving Trust Co., Agwistawn, Trujillo City, 357 pkgs.

Casein

(———), Rio Ateul, Buenos Aires, 600 bags.

Woodpulp

Price & Pierce, Ltd., Markland, Liverpool, N.S., 1881 bls. unbleached sulphite pulp.

BOSTON

Archambeau Worsted Co., Molda, Havre, 2 cs. parchment paper.

NORFOLK

Montmorency Paper Co., Sandra, Botwood, 2340 rolls newsprint.

PORTSMOUTH

Montmorency Paper Co., Sandra, Botwood, 240 rolls newsprint.

NEWPORT NEWS

Montmorency Paper Co., Sandra, Botwood, 2062 rolls newsprint.

* * *

Continue "Token" Imports

OTTAWA—"Token" imports will be allowed into the United Kingdom from Canada during the coming year in continuation of this policy, the Foreign Trade Service, Department of Trade and Commerce, Canadian Government, announces here, and these will include printing paper of the following types, book, text, cover, litho and offset; yellow, varnished paper for bottle cap linings; paper dress patterns; wallpaper; duplicating paper; carbon paper; bristol paper; blotting paper; adhesive labels; indexing or filing cards; writing paper in large sheets, bond or ledger; paper machine wires; papermakers' felts, etc.

Quotas have been established and shipments are being limited to 20 percent of the average prewar imports during the basic period from 1936-38 inclusive.

Any Canadian paper or paper product exporter having a prewar market in the United Kingdom for any of the aforementioned articles is now assured of obtaining a British import license for token shipments, it is learned here. Despite the relatively modest total, the scheme will make it possible for Canadian firms to reintroduce their products on the British market, although the British market has been closed them during the war years. It also implies that money and effort spent before the war by Canadian firms to establish their brands in the United Kingdom would not be wasted now. Shipments may commence immediately.

Reciprocal Trade Talks

NEW YORK — The State Department has issued an announcement that reciprocal trade agreement negotiations will be undertaken with Colombia and Liberia. It has also issued a notice listing supplementary items which will be considered in the negotiations previously announced with Italy, Sweden and Uruguay. The following items of interest to the paper industry are listed in a report by the Import Committee of the American Paper Industry.

Cigarette paper (except cork paper and cigarette paper in bobbins or cut to cigarette size and not including cigarette books)—The present rate of duty as fixed by the Geneva agreements is 30 percent, but inasmuch as the duty rate on cigarette paper was 45 percent on January 1, 1945, the tariff on cigarette paper in sheets can be reduced to 22½ percent. This item is included in the negotiations with Italy.

Manufacture of paper.—This item is included in the negotiations with Sweden. The present rate of duty is 35 percent. It can be reduced to 17½ percent.

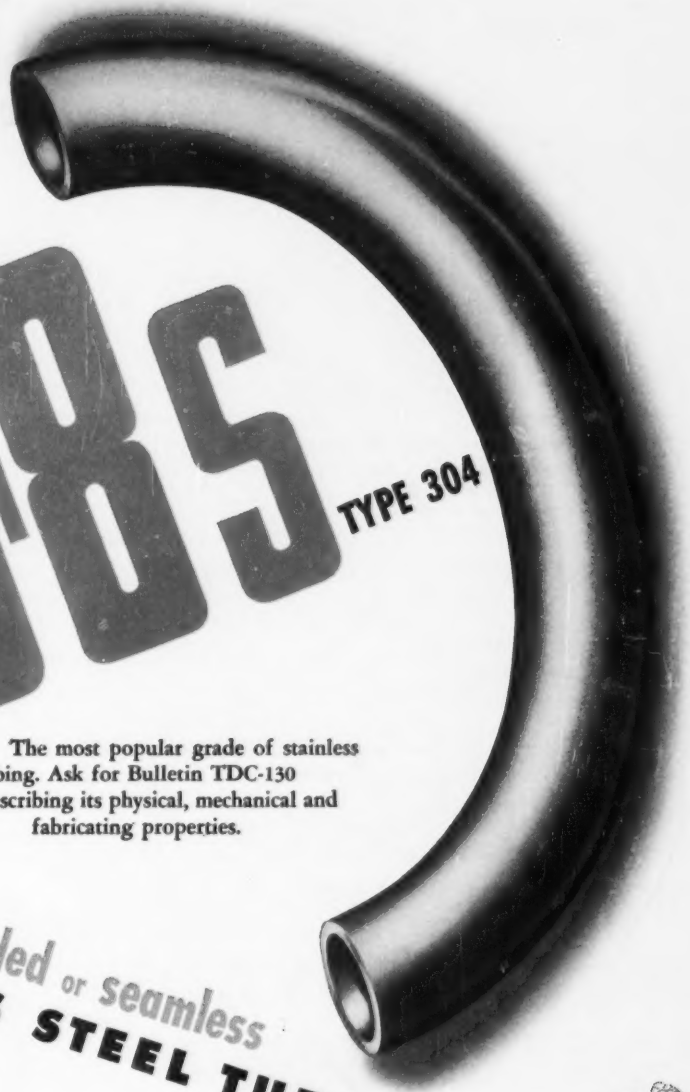
Casein.—The present rate of duty is 2¼ cents per pound. It can be reduced to 1⅛ cents per pound. This item is included in the negotiations with Uruguay.

Tall Oil.—This item is included in the negotiations with Sweden. The present rate of duty is 20 percent. It can be reduced to 10 percent.

JEIA's Virginia Peterson

NEW YORK—Miss Virginia E. Peterson, JEIA's representative in charge of wood pulp purchases for Bizonia, arrived here on December 30 en route to Iowa for holiday leave after a two-year absence. Miss Peterson is responsible for the buying of some 170,000 metric tons of wood pulp during the year 1948 at U. S. market levels. A major portion of the pulp was purchased from Sweden, Finland, Norway, Austria and Canada. U. S. contracts totaled 1300 metric tons of sulphate and 5200 of sulphite. Items of finished paper also were purchased through Belgium, Holland and Sweden on a barter arrangement. Miss Peterson said she is in the market for newsprint and sulphate binder twine. Offers sent to the Paper and Pulp Sales Section, Import Department, Joint Export-Import Agency, Frankfurt, Germany, will reach her desk.

Answers MOST corrosion problems



CROLOY 18-8S TYPE 304

The most popular grade of stainless steel tubing. Ask for Bulletin TDC-130 describing its physical, mechanical and fabricating properties.

welded or seamless
STAINLESS STEEL TUBING

THE BABCOCK & WILCOX TUBE COMPANY
General Offices: Beaver Falls, Pa.
Plants: Beaver Falls, Pa. and Alliance, Ohio

BABCOCK & WILCOX
SEAMLESS & WELDED TUBES

A full range of Stainless, Alloy and Carbon Steel Tubing for All Pressure and Mechanical Applications.

TA 14655

Prices

Quotations indicate trends in an open market. At the moment they can be of little more value. While some volume business still is done under contract at the figures shown, fluctuations are too varied and frequent to permit prices to be interpreted as representing a wholly stabilized market.

NEW YORK

Paper

Delivered New York

STANDARD NEWS, per ton—

Rolls, contract	$100.00/	—
Sheets	115.00/	—

F.o.b. mill, varying freight allowances, Zone 1.

KRAFT—per cwt., 40# base wgt.

No. 1 Wrapping	7.75/	8.00
Standard Wrapping Rolls	7.00/	—
Standard Wrapping Sheets	7.50/	—
Standard Bag	6.50/	—
Multiwall Bag, 40# and heavier, 24x36 (500 sheets)		
Southern	7.50/	7.75
Northern	7.75/	—

TISSUES—Per Ream 24x36 (480) 10/11 lbs.

Wh. No. 1 Frd.	$1.84/	$2.00
Wh. No. 1 M. G.	1.94/	2.00
Wh. No. 1½	1.65/	—
Wh. No. 2	1.50/	1.60
Kraft Anti-Tar	1.65/	—
Kraft Unbl.	1.85/	—
Shred. Wh. No. 1 per lb.	.12¾/	.18

TOILET—Per Case of 100 rolls—1 M Sheets.

Unbleached 4½x4½	$7.20/	—
Bleached 4½x4½	8.00/	—
Bleached 4½x5	8.45/	8.75

Per Case of 50 rolls—1500 sheets

Unbleached 4½x4½	$5.70/	—

Per Case of 50 rolls—2000 sheets

Unbleached 4½x4½	$6.95/	—
Bleached 4½x4½	7.70/	—

PAPER TOWELS—Per Case of 3750—Zone 1.

Wh. Jr. M'tif'd 9¼x9½	$5.45	
Br. Sr. M'tif'd 10x12	3.80	
Br. Jr. M'tif'd 9½x9¾	3.30	
Br. Jr. Sgl. fold 10x10¾	3.35	

MANILA, per cwt.

No. 1 Jute Tag, sheets*	$15.05/	—
Reg. Jute M.F. Manila, sheets*	13.50/	15.50
No. 1 Manila Wrapping	8.75/	10.50
Printing Manila	10.00/	11.00

* Less usual allowance for rolls.

BOARDS, per ton—

Filled News	82.50/	—
Plain Chip	80.00/	—
Blchd. Mla. L-d. Chip*	105.00/	
White Pat. coated*	120.00/	
Kraft Liners 42 lb.	105.00/	
Kraft Corr. .009	110.00/	
Binders Boards	120.00/126.00	

* Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

World Wood Pulp Markets at a Glance

First Quarter Contract Prices, Per Short Air-Dry Ton

	Delivered, with varying freight allowances		On dock Atlantic Ports		
	U. S	Canadian	Swedish	Finnish	Norwegian
Groundwood	$80.00/$81.00	$80.00/$81.00			
Sideruns Pulping News		80.00/ 90.00			
Soda, Bleached	130.00/135.00	130.00/ —			
Sulphate, Bleached	136.00/145.00	147.50/150.00	$150.00/ —		
Sulphate, Unbl'd North'n	115.00/125.00	115.00/125.00	127.50/ —	127.50/ —	
Sulphate, Unbl'd South'n	105.00/115.00				
Sulphite, Blchd. (S'ftw'd)	126.00/135.00	135.00/ —	140.00/165.00	165.00/ —	140.00/165.00
Sulphite, Blchd. (H'dw'd)	125.00/145.00				
Sulphite, Unbleached	118.00/ —	125.00/ —	135.00/140.00	140.00/143.00	
Sulphite, Unbl'd (Glassine) (no freight allowed)	120.00/ —	125.00/130.00 118.00/ —			

Waste Paper Market

Base Prices to Mills for Average Packings

F.O.B. Shipping Point (Per Ton)

	New York Jan. 3	Philadelphia	Boston Dec. 27	Chicago Dec. 1
No. 1 Hd. Wht. Env. Cuts	$95.00/100.00	$95.00/100.00	$——/100.00	$100.00/——
No. 1 Hd. Wht. Shvs., unr'l'd	80.00/ 85.00	85.00/ 90.00	——/ 90.00	90.00/——
Super Soft Whit. Shvs.	80.00/ 85.00			
No. 1 Soft Wht. Shvs.	60.00/ 65.00	65.00/ 70.00	——/ 70.00	50.00/ 55.00
No. 1 Fly Leaf Shvs.	40.00/——		——/ 30.00	
No. 1 Gdwd. Fly Leaf Shvs.	30.00/ 35.00			
No. 1 Heavy Books & Mag.	19.00/ 21.00	20.00/ 22.00	——/ 18.00	28.00/ 30.00
Mixed Books	13.00/ 15.00		9.00/——	
No. 1 Wht. Ledger	45.00/ 50.00	50.00/ 55.00		30.00/——
Colored Ledger	35.00/ 40.00			
Manila Tab. Cards	50.00/ 55.00			
New Manila Env. Cuts	60.00/ 65.00	70.00/ 75.00	——/ 65.00	
Extra Manilas	20.00/ 25.00			
Mxd. Kraft, Bag Cuts	45.00/ 55.00			
Kraft Envelope Cuts	55.00/ 65.00		70.00/ 75.00	70.00/——
Trpl. Std. No. 1 Brn. Sft. Kraft	35.00/ 40.00		——/ 45.00	
New Kraft Corr. Cuts	30.00/ 35.00	35.00/ 40.00	——/ 40.00	
No. 1 Asstd. Old Kraft	30.00/ 35.00	30.00/——		20.00/——
Used Kraft Bags	30.00/ 35.00			
New Jute Corr. Cuts	18.00/——			
Old Corrugated	14.00/ 15.00	12.00/ 15.00	13.00/ 14.00	14.00/——
No. 1 News	13.00/ 14.00	11.00/ 13.00	11.00/ 12.00	——/ 15.00
No. 1 Mixed Papers	6.00/ 7.00	7.00/ 8.00		8.00/——
Box Board Cuts	7.00/ 8.00	8.00/ 10.00		
White Blank News	60.00/ 65.00	65.00/ 70.00	——/ 62.50	45.00/——
Overissue News	17.00/ 18.00	15.00/ 16.00	15.00/——	18.00/——
Sulphite Mill Wrappers	12.00/ 14.00			11.00/——

The following prices are representative of distributors' resale prices, all deliveries in Zone 1:

RAG CONTENT BONDS AND LEDGERS—

White, 16 lb. Bonds, per cwt.

	Carton 4	C't'n	Ton
100% Rag Ext. No. 1	$59.00	$54.55	$52.30
100% Rag	52.25	48.30	46.30
75% Rag	41.50	38.30	36.70
50% Rag	33.75	30.70	29.50
25% Rag	30.25	27.45	26.35

LEDGERS, per cwt.

100% Rag Ext. No. 1	$57.00	$52.65	$50.50
100% Rag	50.25	46.40	44.50
75% Rag	41.50	38.30	36.70
50% Rag	33.75	30.70	29.50
25% Rag	30.25	27.45	26.35

SULPHITE BONDS AND LEDGERS—

White, 16 lbs. Bonds, per cwt.

No. 1	$21.25	$19.25	$18.50
No. 2	20.25	18.30	17.55
No. 4	19.25	17.55	16.85

LEDGERS, per cwt.—

No. 1	$21.75	$19.65	$18.85
No. 2	20.75	18.75	18.05
No. 4	20.00	18.10	17.35

WHITE BOOK, per cwt.—

	Case	Ton
Coated		
No. 1 Glossy	$20.90	$20.15
No. 2 Glossy	19.65	18.90
No. 3 Glossy	18.90	18.25
Machine Coated	16.65 to 17.15	16.05 to 16.35
Uncoated		
No. 1 Antique (Watermarked)	16.40	15.80
Offset	15.15 to 17.15	14.60 to 16.40
A Grade E. F.	15.40	14.85
A Grade S. C.	15.90	15.35
B Grade E. F.	15.15	14.55
B Grade S. C.	15.65	14.95

New Domestic Cotton Cuttings

(Prices to Mill, F.o.b. Ship. Pt.)

White Shirt	$10.00/	$10.50
Unbleached Muslin	10.50/	11.50
Light Silesias	7.75/	8.00
White Back Blue Overalls	6.25/	6.75
Blue Overalls	6.00/	6.50
Fancy Shirt	5.00/	5.50
Percales	6.25/	6.50
Light Prints	6.50/	6.75
No. 1 Washables	4.00/	4.50
Bleachable Khaki	5.50/	5.75
Unbleachable Khaki	5.00/	5.50
Cottonades	4.75/	5.25
Lt. Flannelettes	7.50/	8.00
Men's Corduroy	4.25/	4.50
Women's Corduroy	4.00/	4.25

Old Domestic Cotton Rags

(Prices to Mill, F.o.b. Ship. Pt.)

	Per 100 lbs.	
No. 1 Whites, Repacked	$5.00/	$5.50
No. 1 Whites, Miscellaneous	4.00/	4.50
No. 2 Whites, Repacked	3.00/	3.50
No. 2 Whites, Miscellaneous	2.50/	2.75
Blue Overalls	3.50/	4.00
Thirds and Blues, Repacked	2.25/	2.75
No. 1 Roofing Rags	1.40/	1.50
No. 2 Roofing Rags	1.25/	1.35
No. 3 Jute Bagging	1.15/	1.25
No. 4 Brussels & hrd. Bck'd crpts.	1.25/	1.35
No. 5A Roofing Rags	1.25/	1.35

New Foreign Cotton Cuttings

(Prices to Mill, F.o.b. Dock, N. Y.)

	Per 100 lbs.	
New Dark Cuttings	$5.50/	$5.75
New Mixed Cuttings	6.25/	6.50
Light Silesias	9.25/	9.50
Light Flannelettes	9.25/	9.50
New White Cuttings	12.00/	13.00
New Unbleached Cuttings	12.25/	13.00
Fancy Shirt Cuttings	6.50/	7.00
Light Prints	7.75/	8.00
Bleachable Khaki, No. 1	7.00/	7.50
Unbl. Khaki, No. 1	6.25/	6.75

Old Foreign Rags

(Prices to Mill, F.o.b. Dock, N. Y.)

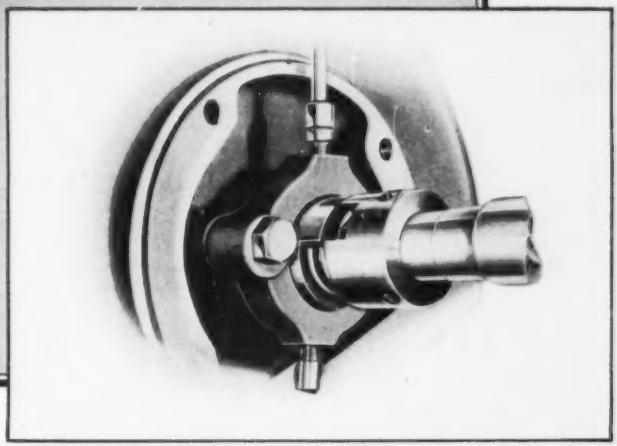
	Per 100 lbs.	
No. 1 White Cottons	— /	—
No. 2 White Cottons	— /	—
No. 3 White Cottons	— /	—
No. 4 White Cottons	3.50/	3.75

(Continued on page 34)

When Packing Against

CORROSIVE LIQUIDS . . .

you can depend on Worthington Worthite Pumps equipped with Type EA Mechanical Seals



Worthington Type EA Mechanical Seal for Worthite Type CG Chemical Pumps. Three sizes of seals for 23 sizes of pumps.

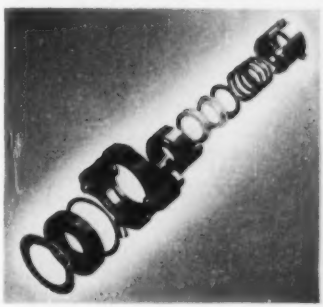
If you have been running into trouble with your stuffing boxes and packings, it's time to consider Worthington Type EA Mechanical Seals. They're especially designed for Type CG Worthite Pumps up to 1200 gpm capacity.

These seals have given outstanding performance in corrosive liquid service. The following distinctive features tell you why:

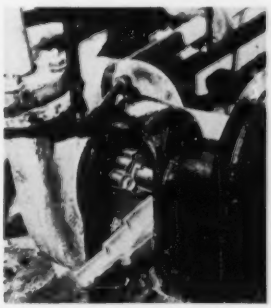
No stuffing box . . . no packing to replace. Outside assembly . . . easy to apply, simple to repair. No parts churning in acid. All parts made of corrosion resisting material. Pressure is adjustable without dismantling. Single coil Worthite spring. Tongue and groove drive.

Write for BULLETIN W-350-B-10.

For complete details about this Worthington contribution to better pumping of corrosive liquids and further proof that *there's more worth in Worthington* write for Bulletin W-350-B-10. *Worthington Pump and Machinery Corporation, Centrifugal Pump Division, Harrison, N. J.*



Exploded view of Worthington Type EA Mechanical Seal shows simplicity of this tested solution to tough stuffing box problems.



CGH-1A Worthite pump equipped with Worthington Mechanical Seal in a Southern chemical plant.

WORTHINGTON

CG-6

THE WORLD'S BROADEST LINE ASSURES YOU THE RIGHT PUMP FOR EVERY JOB

Types CG and CGL. Sizes ¾" to 10". Capacities to 5000 GPM; heads to 200 ft. Liquid ends of WORTHITE alloy.

Type CF. Sizes 1" to 4". Capacities to 1000 GPM; heads to 130 ft. Standard, all iron and all bronze.

Type CQ. Sizes 1½" to 3". Capacities to 600 GPM; heads to 130 ft. at 1750 RPM. Closed impeller. WORTHITE shaft and fittings.

Type L. Sizes 3" to 8". Capacities to 2250 GPM; heads to 300 ft. Single stage volute. For general service.

Prices

CONTINUED FROM PAGE 32

Extra Light Prints	6.50/	7.00
Old Ligh: Prints	4.50/	5.00
Med. Light Prints	4.00/	4.50
Dutch Blue Cottons	5.25/	5.50
Checks and Blues	3.25/	3.50
Linsey Garments	2.15/	2.25
Dark Cottons, European	2.00/	2.10
Dark Cottons, Egyptian	1.90/	2.00
Old Shopperies	nominal	
New Shopperies	nominal	

Bagging

(Prices to Mill, f.o.b. N. Y.)

	Per 100 lbs.	
Foreign Gunny, No. 1	$8.00/	$8.50
Domestic Gunny, No. 1	7.50/	8.50
Heavy Wool Tares	7.50/	7.75
No. 1 Scrap Bagging	7.25/	7.50
Roofing Bagging	1.10/	1.20
Foreign Manila Rope	5.50/	5.75
Domestic Manila Rope	6.00/	6.25
Jute Strings	7.00/	7.25
No. 1 Sisal Strings	5.25/	5.50
Mixed Strings	1.50/	1.75

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)

Coarse Polished—India	.35½/	.36½
Fine Polished India	.41½/	.45
Unpolished—Paper Makers	.32¼/	.34½
Tube Rope	.33¼/	.35½
Wrapping	.36 /	.38¼
Cotton	.58 /	.60
Polished Cotton	.55 /	—

(Hard Fiber)

Mex. Sisal	.21 /	.27
Manila (Reprocessed)	.31 /	.35

(American Hemp)

Polished Hemp	.46½/	.48
Unpolished	.35 /	.37½

PHILADELPHIA

Domestic Rags (new)

(F.o.b. Eastern Shipping Point)

White Shirt	.10½/	.11
Light Silesias	.07½/	.08
Black Silesias, soft	.05½/	.06
Unbleached Muslin	.10½/	.11¼
Washable Prints	.06½/	.07
Washable No. 1	.05 /	.05½
Blue Overall	.07½/	.08
Washable Shredding	.02¾/	.03¼
Fancy Percales	.06¾/	.07¼
Bleachable Khaki	.05½/	.06½
Bleachable Khaki	.06¼/	.06¾
Men's Corduroy	.05½/	.06
Ladies' Corduroy	.05 /	.05½
Cottonades	.05½/	.06

Domestic Rags (Old)

(F.o.b. Eastern Shipping Point)

White No. 1—Repacked	4.50 /	5.00
Mixed White	4.00 /	4.25
White No. 2—Repacked	3.50 /	3.75
Thirds and Blues—		
Miscellaneous	2.50 /	2.75
Repacked	3.00 /	3.25
Domestic No. 1 Roofing Stock	1.55 /	1.60
Domestic No. 2 Roofing Stock	1.45 /	1.50
Rooting Bagging	1.35 /	1.40
Old Manila Rope	— /	5.50

Bagging

(F.o.b. Eastern Shipping Point)

Foreign Gunny No. 1	nominal	
Domestic Gunny No. 1	.07¼/	.07¾
Sisal Strings No. 1	.04½/	.05
Sisal Strings No. 2	.03½/	.04
Sisal Jute	.02¾/	.03
No. 1 Scrap	.06½/	.07
No. 2 Scrap	.03 /	.03½

BOSTON

Bagging

(F.o.b. Boston)

	(Per 100 lbs.)	
Foreign Gunny	nominal	
Domestic Gunny	9.00 /	—
Domestic No. 1 Old Rope	6.00 /	6.50
Foreign No. 1 Old Rope	5.75 /	6.00
Mixed Strings	1.35 /	—
Transmission Rope—		
Domestic	3.00 /	—
Jute Carpet Threads	— /	4.00
Bleachery Burlap	— /	9.00
Scrap Burlap—		
Foreign	6.75 /	7.00
Domestic	8.25 /	8.50
South America	8.25 /	8.50
Austr. Wool Pouches	8.00 /	—
New Zealand Wool Pouches	8.00 /	—
New Burlap Cuttings	8.50 /	—
Heavy Baling Bagging	8.00 /	8.50
Paper Mill Bagging	8.00 /	—
No. 1 Roofing Bagging	— /	1.40

Domestic Rags (New)

(F.o.b. Boston)

	(Per 100 lbs.)	
New Light Percales	nominal	
Fancy Percales	7.00 /	—
White No. 1 Shirt	11.00 /	11.50
Light Flannelettes	8.00 /	—
Canton Flannels, Bleached	10.00 /	—
Underwear Cutters, Bleached	10.50 /	11.00
Underwear Cutters, Unbleached	10.50 /	11.00
Silesias No. 1	7.25 /	8.00
Blue Overalls	7.75 /	8.00
Soft Unbleached	11.00 /	11.50
Blue Cheviots	7.75 /	8.00
Fancy Shirt	5.50 /	—
Washable	6.00 /	—
Khaki Cuttings	6.00 /	—
Corduroy	4.00 /	—
Men's Corduroy	4.50 /	—
Khaki Canvas	— /	6.00
B. V. D. Cuttings	11.00 /	—

Domestic Rags (Old)

(F.o.b. Boston)

	Per 100 lbs.	
No. 1 Whites, Repacked	$4.25	/$4.50
No. 1 Whites, Miscellaneous	3.00	/ 3.75
Twos and Blues, Repacked	2.50	/ 3.00
Old Blue Overalls	3.00	/ 3.25
No. 1 Roofing Stock	—	/ 1.45
No. 2 Roofing Stock	—	/ 1.35
No. 3 Roofing Stock	—	/ .90
No. 4 Roofing Stock	—	/ .90
No. 5, Quality A	—	/ 1.20
Old Manila Rope	6.00	/ —

Markets

Blanc Fixe

Demand steady. Dry direct process supply good. Currently quoted at $85.00 in bags, car lots at works, 6 cents per pound, l.c.l., deld. By-product supply somewhat restricted. Quoted at $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder

Prices unchanged. Demand continues good. Supply adequate. Prices range from $4.25 to $4.75 per 100 pound drums, l.c.l., works.

Casein

Demand fair; prices firm. Buying in Argentine suspended till export tax matter is settled. Expect bigger U. S. supply and much lower prices in 1949. Current prices on processed acid precipitated casein at 28 to 32 cents per pound for domestic grades and 25½ to 27 cents for imported grades, f.o.b. shipping point.

Caustic Soda

Liquid types in good supply. Flaked and solid improving but still tight. Solid caustic is reported at $3.10/$3.20 per cwt. flaked and ground is quoted at $3.50 per cwt., in 400 pound drums, $4 to $4.45 per cwt. in 100 pound drums —car lots at works; liquid 50 percent in tank cars at $2.50 per cwt.; liquid 73 percent in tank cars at $2.60 per cwt., at works.

China Clay

Supply ample. Demand steady. Domestic filler quoted at $10 to $12.50 per ton, car lots, f.o.b. mines. Coating clay is $15 to $25. Imported clay quotation, short tons, $16 to $35, export warehouse.

Chlorine

Strong and sustained demand. Shortage of tankcars and multi-unit containers hampers delivery. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt., in multi-tank cars, f.o.b., works.

Rosin

Trading dull on Savannah and local markets. Export activity disappointing. Gum rosin in drums per 100 pounds net in car lots, f.o.b., Savannah: B, $6.63; G, H, I, K, $7.65. Wood rosin per 100 pounds net, car lots, f.o.b. Savannah: B, $5.00; FF, $6.50.

Rosin Size

Heavy demand. Supply good. Seventy percent gum and pale wood grades, tank cars, $6.30 to $6.40, f.o.b. southern shipping point.

Salt Cake

Supply good. More efficient use has cut industry needs. Prices steady. Domestic salt cake quoted at $27.00, f.o.b. shipping point, freight allowed to destination.

Soda Ash

Delivery good. Increased production and eased demand from other industries makes supply condition favorable. Current prices, car lots per 100 pounds: in bulk, $1.15; in paper bags, $1.40; and in barrels, $1.90.

Sodium Bicarbonate

Production good. Demand eased by better supply of other alkalis. Reported as $1.95 per cwt. paper bags, carload lots.

Starch, Corn

Demand fair; prices firm. Supply ample. Pearl grade quoted at $4.82 per 100 pounds; powdered starch at $4.93 per 100 pounds; car lots, f.o.b. Chicago.

Starch, Potato

Demand improved. Prices stronger with possibility of 2c rise if French inquiry develops. Supply ample. High grade quoted at $4.80/$5.00 cwt., f.o.b. Idaho; $5.10/$5.25 f.o.b. Maine; Pearl grade, $5.00/$5.15 cwt. f.o.b. Maine.

Sulphate of Alumina

Supply good. Price steady. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.50 per 100 pounds in bags, car lots, at works.

Sulphur

Export demand appreciably increased. Supply good. Annual contracts are quoted at $18 per long ton, f.o.b. mines; export price f.o.b. at Gulf ports is $22.00 per long ton.

Talc

Demand continues in excess of supply. Improvement seen by early 1949. Prices steady. Domestic grades are currently quoted at $23 per ton in paper sacks, f.o.b. mills; Canadian at $35 and up per ton. All prices in car lots.

Tapioca Flour

Market quiet, but firm. High grades in fair supply. Superior high range from $10.25/$11.50 cwt.; high grades $9.25 cwt., on dock Atlantic and Gulf ports; medium grades range from $6.00/$7.50 cwt. on dock, N. Y. Coarse pearl grades, $5.00/$5.50 cwt. on dock N. Y. Medium and low grades in adequate supply.

Titanium Dioxide

Prices advance 1½ cents, actual freight allowed. Supply of paper grades continues unequal to demand. Shipments on allocation. Improvement in supply delayed to 1951. Anastase 19½c pound carload lots, 20c l.c.l., rutile, 21½c pound carload lots, 22½c l.c.l.; 50-pound bags, f.o.b. plant, actual freight allowed.

Keep the *wet* end *dry*...

From the thinnest tissue to the heaviest board there is a Hamilton Felt that will remove more water at the wet end of your machine and lower your drying costs.

SHULER & BENNINGHOFEN, HAMILTON, OHIO

Miami Woolen Mills

Hamilton Felts

Established 1858

Financial Record

Preferred Stocks	Per Share Calendar Year 1947	Earnings 12 Mos. to Approx. 9/30/48	Indic. Annual Divid. Rate	Jan. 4 Approx. Market Price
Armstrong Cork Co. $3.75 Cum.	$38.64*	$43.53*i	$3.75	
Armstrong Cork Co. $4.00 Cum. Conv.	38.64*	43.53*i	4.00	
Celotex Corp. 5% Cum.	24.25c	26.25g	1.00	18⅛
Champion Paper & Fibre $4.50 Cum.	65.90f	43.82j	4.50	
Container Corp. of Amer. 4% Cum.	102.74	98.49	4.00	95
Crown Zellerbach $4.20 Cum.	56.40f	59.10k	4.20	94½
Crown Zellerbach $4.00 Cum. Conv. 2nd	211.39f	178.01k	4.00	96½
Dixie Cup Co. $2.50 Cum. Conv. Cla	9.16	9.61	2.50	50¼
Flintkote Co. $4 Cum.	81.91	87.68	4.00	
Robert Gair Co., Inc. 6% Cum.	18.01	15.97	1.20	
International Paper Co. $4 Cum.	236.51	242.27	4.00	93¾
Johns-Manville $3.50 Cum.	128.81	175.15	3.50	
Kimberly Clark Corp. 4½% Cum.	70.03	82.79	4.50	
Kimberly Clark Corp. 4% Cum. Conv. 2nd	95.88	114.55	4.00	
MacAndrews & Forbes 6% Cum.	62.20	59.89	6.00	
Mead Corp. 4¼% Cum.	81.56	80.43	4.25	
Mead Corp. 4% Cum. Conv. 2nd	53.34	51.89	2.00	32⅛
Paraffine Cos. Inc. 4% Cum. Conv.	152.76a	158.96	4.00	
Rayonier Inc. $2 Cum.	13.58	16.09	2.00	32⅛
St. Regis Paper Co. 4.40% 1st A	76.93	85.00	4.40	
Scott Paper Co. $3.40 Cum.	43.95	54.31	3.40	
U. S. Gypsum Co. 7% Cum.	211.34	300.59	7.00	
United Wallpaper Inc. 4% Cum. Conv.	(d)1.35a	(d)6.28	2.00	
West Virginia Pulp & Paper 4½% Cum.	75.75c	78.49g	4.50	108
Common Stocks				
APW Products Co.	$1.24	$1.32	$0.25	
American Writing Paper Corp.	1.61	0.02	0.25	
Armstrong Cork Co.	6.41	7.17i	3.00	42⅝
Celotex Corp.	6.59c	7.15g	2.00	25⅝
Certain-Teed Prods. Corp.	3.75	3.99	1.15	12⅝
Champion Paper & Fibre	5.57f	3.81j	2.00	
Congoleum Nairn Co.	4.55	5.12i	2.25	28¼
Container Corp. of America	10.09	9.54	4.50	34½
Crown Zellerbach	6.81f	6.70k	2.00	25⅝
Dixie Cup Co.	5.87	6.26	1.00	
Eastern Corp.	5.02	6.51	1.00	15¼
Flintkote Co.	6.27	6.28	3.00	29½
Robert Gair Co., Inc.	2.83	2.49	0.70	6¾
Great Northern Paper Co.	4.56	4.55	2.80	36½
International Paper Co.	15.02	15.39	5.00	51⅜
Johns-Manville Corp.	3.17	4.28	2.00	38⅝
Kimberly-Clark Corp.	4.29	5.16	1.65	20⅜
MacAndrews & Forbes Co.	3.68	3.53	2.50	
Marathon Corp.	4.11e	.....	1.40	19⅞
Mead Corp.	7.33	7.11	2.00	16½
National Container Corp.	4.13	2.86	1.20	9⅜
Paraffine Cos. Inc.	2.40a	2.50	1.20	18¾
Rayonier, Inc.	7.30	8.88	2.00	26⅝
Ruberoid Co.	10.88	12.90	3.25	53⅞
St. Regis Paper Co.	2.66	2.86	0.80	8⅝
Scott Paper Co.	3.02	3.79	2.50	46
Sutherland Paper Co.	6.87	6.43	2.50	33¼
Taggart Corp.	1.29		0.60	
Union Bag & Paper Corp.	7.93	8.13	4.00	29⅞
United Board & Carton	4.95b	2.04h	1.25	6⅞
U. S. Gypsum Co.	10.00	14.36	6.00	101
United Wallpaper	(d)0.11a	(d)0.27	——	3
West Virginia Pulp & Paper	11.40c	11.56g	4.00	40¼

(a) Year ended 6/30/48
(b) Year ended 5/30/48
(c) Year ended 10/31/47
(d) Deficit
(e) Year ended 10/31/48
(f) Year ended 4/30/48
(g) 12 months to approximately 7/31/48
(h) 12 months to 11/13/48
(i) 12 months to approximately 6/30/48
(j) 5 months to 9/30/48
(k) 12 months to approximately 10/30/48
(*) Pro forma

Bathurst Initial Dividend

OTTAWA—In regard to the report that holders of Class "B" stock of Bathurst Power & Paper Co., will get an initial dividend paid on this stock on March 1, it is pointed out that the Class "B" stock of the company participates in dividends only after $2 a share has been paid in any one year on the Class "A" stock, implying that this has been conformed with because the company has declared a regular 37½ cents quarterly payment on the Class "A" stock payable on March 1, plus an extra 75 cents which applies to 1948. Consequently, Class "A" stock has been covered for 1948 by a total of $2.25 and the Class "B" 25 cents.

Nepco 1948 Progress

PORT EDWARDS, Wis.—"The close of another year finds Nekoosa-Edwards in a stronger position than ever before, with our properties and facilities in peak condition and ready to meet the competitive conditions that face us today," John E. Alexander, president and general manager of the Nekoosa-Edwards Paper Company, Port Edwards, Wis., declared in a year-end statement.

In summarizing the physical improvements installed during 1948, Mr. Alexander described the mechanization of the Port Edwards mill finishing department and the addition of new and improved cutters and trimmers. A new pipeline was installed from Nepco Lake to the mills, providing for improved water treatment as another part of the extensive program to improve quality. The mill finishing department moved into new quarters which provided nearly 15,000 square feet equipped with the latest lighting, ventilating, and stock-handling equipment. A Cottrell electrical precipitator was installed at the Nekoosa mill to remove sodium salts from the recovery furnace gas stream.

During the summer No. 4 machine at Nekoosa was completely rebuilt and an additional dryer section and a size press added to the machine. The calender stack was rebuilt and the overall length of the machine increased approximately 60 feet. Among other improvements to the machine was the installation of a bank of 13 vortraps along the back side at the wet end. Drying in each section of the machine is handled by modern moisture control units.

"Our two communities of Nekoosa and Port Edwards have tackled the housing shortage with vigor and determination," Mr. Alexander declared in pointing out that 69 new homes have been built in the two Nepco towns since January, 1946.

Sales Top $75,000,000

NEW YORK—During 1948, the Union Bag & Paper Corp. manufactured the greatest volume of products in its history, totaling approximately 380,000 tons of paper, paper board, paper bags, and boxes, with net sales amounting to over $75,000,000, compared with 1932, when they totaled $6,422,000, Alexander Calder, president, reports.

Scott Bank Loans Halved

CHESTER, Pa. — Scott Paper Co. reduced its outstanding bank loans from $4,000,000 to $2,000,000 on December 27, when it prepaid $2,000,000 principal amount of notes due in 1952 and 1953, Raymond C. Mateer, executive vice-president, told *Paper Trade Journal.*

FORMATION
CALIPER
LEVEL SHEET
INCREASED SPEED
HIGHER TEST

Again and again . . . it's Inlet and Headbox by VALLEY

This is No. 3 Machine
BROWN PAPER MILL CO., Inc.
MONROE, LOUISIANA

AND NOW
On more and more machines in the SOUTH it's Inlet and Headbox by
VALLEY

VALLEY IRON WORKS CO.
Appleton, Wisconsin

County's Biggest Taxpayer

CHARLESTON, S. C.—William J. Leonard, Charleston County treasurer, has just received from the West Virginia Pulp & Paper Co. a check for over a quarter of a million dollars in payment of its 1948 tax bill.

Mr. Leonard said West Virginia is by far the county's largest taxpayer. Last year, according to official figures, it paid $149,462.53. The payment this year reached $253,322.11, an increase of more than $100,000, due mainly to an increase in the assessment of the recent installation of a new fourdrinier kraft paper machine. With other improvements, the new machine added about 50,000 tons a year to the capacity of the Charleston plant.

Treasurer Leonard pointed out that the tax covers real estate and equipment at the plant and woodlands located in Charleston County. West Virginia Pulp & Paper also pays taxes on extensive woodlands owned in other counties in this area, he added.

Marathon Sales Earnings Up

ROTHSCHILD, Wis.—The Marathon Corp. showed a rise in both sales and earnings in the fiscal year ended October 31, 1948, D. C. Everest, president, reported on December 28.

Consolidated net earnings of $5,593,238 after income tax provisions were up 20 percent from the preceding year's total of $4,654,457, Mr. Everest added. After preferred stock dividend requirements, the last year's earnings were equal to $4.11 a share on 1,300,000 shares of $6.25 par value common stock outstanding, compared with $3.39 a share on the same basis a year before.

Net sales totaled $56,766,915 in the latest twelve month period, compared with $44,604,332 in the preceding fiscal year, an increase of 27 percent. Provisions for income taxes were $3,451,414, compared with $3,375,525 a year before.

Bank Loans Drop

OTTAWA—The annual classification of bank loans in Canada shows that, as of September 30, 1948, manufacturers of and dealers in pulpwood and products thereof, and lumber, dropped to $112.7 millions compared with $116.4 millions on the same date of the preceding year. On October 31, 1946, such loans totalled $79.4 millions.

St. Regis Sales Peak

NEW YORK—St. Regis Paper Co. net sales for 1948 established a new peak at approximately $160,000,000. During the year the company practically completed its current broad program of expansion and modernization.

Dividends Up 28 Percent

WASHINGTON — Publicly reported dividend payments for the paper and printing industries combined rose to $6,400,000 in November, 1948, from $5,000,000 in the same month a year earlier, the Department of Commerce reported this week. The payments were not shown for the industries separately.

Paper Company Securities—1948 Record

Year's High, Low and Closing Prices

Preferred Stocks	High	Low	Last
Armstrong Cork Co. $3.75 Cum.	99¼	88	97
Armstrong Cork Co. $4.00 Cum. Conv.	115½	103	109⅞
Celotex Corp. 5% Cum.	20⅝	17⅝	18
Champion Paper & Fibre $4.50 Cum.	100¾	90	91½
Container Corp. of America 4% Cum.	99½	90	95½
Crown Zellerbach $4.20 Cum.	103½	91½	96
Crown Zellerbach $4.00 Cum. Conv. 2nd	129	95	95
Dixie Cup Co. $2.50 Cum. Conv. Cla	56	46⅞	50
Flintkote Co. $4 Cum.	104	96	100½
Robert Gair Co., Inc. 6% Cum.	20	16½	17½
International Paper Co. $4 Cum.	99	86	93½
Johns-Manville $3.50 Cum.	113⅞	100½	106
Kimberly-Clark Corp. 4½% Cum.	....	....	....
Kimberly-Clark Corp. 4% Cum. Conv. 2nd	104¾	92	94½
MacAndrews & Forbes 6% Cum.	142	129	130½
Mead Corp. 4½% Cum.	96½	80¼	82
Mead Corp. 4% Cum. Conv. 2nd	46½	31¼	32
Paraffine Cos. Inc. 4% Cum. Conv.	105	97	103½
Rayonier Inc. $2 Cum.	35	31	32
St. Regis Paper Co. 4.40% Ist A	91½	79	80¼
Scott Paper Co. $3.40 Cum.	95	88	93
U. S. Gypsum Co. 7% Cum.	179	166½	173
United Wallpaper Inc. 4% Cum. Conv.	34	22	22½
West Virginia Pulp & Paper 4½% Cum.	110½	100½	106

Common Stocks	High	Low	Last
APW Products Co.	6¾	4	4
American Writing Paper Corp.	9	5	5⅜
Armstrong Cork Co.	56¼	41¾	48
Celotex Corp.	34⅜	22¾	26⅝
Certain-Teed Products Corp.	20	12⅝	12¾
Champion Paper & Fibre	26⅞	17⅝	22¾
Congoleum Nairn Co.	36⅜	27½	28⅛
Container Corp. of America	42½	33⅛	33⅞
Crown Zellerbach	34⅝	23½	25
Dixie Cup Co.	41	25	27
Eastern Corp.	19½	13	13½
Flintkote Co.	42⅝	28⅛	30
Robert Gair Co., Inc.	10¼	6½	6⅝
Great Northern Paper Co.	44½	36	36½
International Paper Co.	64¾	42¾	51⅜
Johns-Manville Corp.	42¼	33¼	38½
Kimberly-Clark Corp.	24	19	20¾
MacAndrews & Forbes Co.	40	35¼	35¼
Marathon Corp.	25¼	18⅞	20¾
Mead Corp.	23½	15	16¼
National Container Corp.	13½	9¼	9⅜
Paraffine Cos. Inc.	28	18⅝	19
Rayonier, Inc.	36	22½	28
Ruberoid Co.	72	54	55½
St. Regis Paper Co	13¾	8	8½
Scott Paper Co.	51	39⅜	47¾
Sutherland Paper Co.	44½	31	32¼
Taggart Corp.	12	10¼	11⅛
Union Bag & Paper Corp.	39⅞	27⅝	30⅝
United Board & Carton	15¼	6¼	6½
U. S. Gypsum Co.	113¾	92½	101¾
United Wallpaper	6¼	2⅝	2⅝
West Virginia Pulp & Paper	51⅝	38¼	40

'48 ECA $50,000,000

WASHINGTON—Nearly $50,000,000 in pulp and paper procurements were authorized by the ECA from the start of the aid program to December 24, that agency reports.

Authorizations, mainly to European countries, total $49,658,000, it was stated. Purchases have been made largely from United States sources, although some procurement has been extended to Canada in more recent months.

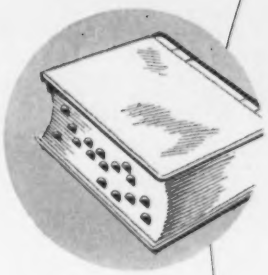
Dam Protection Achieved

HOLYOKE, Mass.—Holyoke, for the first time in its history, soon will be fully protected against flood waters of the Connecticut River with the completion of a $3,000,000 flood control wall four miles long, it was disclosed December 16.

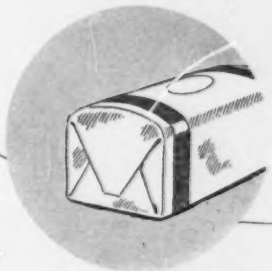
Metropolitan Group TAPPI

NEW YORK—The Metropolitan Group TAPPI will meet at Fraunce's Tavern, Broad and Pearl streets, at 6:45 p.m., January 11, when Brig. Gen. L. O. Grice, commanding the New York Q.M.C. purchasing office will speak on the subject of "Quartermaster Requirements, Operations and Policies."

TITANOX PIGMENTS



impart higher opacity to all types of paper



The excellent opacifying, whitening and brightening results contributed to lightweight and waxed stock by TITANOX pigments are also imparted to publication papers. Here, a reduction of "show-through" and higher printing opacity are available through the use of these famous titanium dioxide pigments. Thus, the attractiveness of printed messages and illustrations is greatly enhanced.

Our Technical Service Laboratory staff members will be glad to discuss with you the possibility of creating greater sales-appeal in your paper with TITANOX pigments . . . and doing it economically. Call or write our nearest office. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; 104 So. Michigan Ave., Chicago 3, Ill.; 2600 So. Eastern Ave., Los Angeles 22, Calif. Branches in all principal cities.

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TITANIUM PIGMENT CORPORATION

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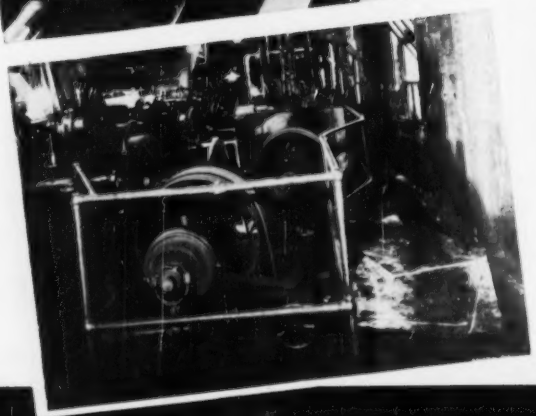
Here's the Drive that Performs Better...

WITH ASSURED MACHINE CONTROL...IT'S

SYCO



Increased production and greater uniformity in quality is obtained by precision speed control on all sections of your paper machine at all times.

SYCO gives you convenient and exact control at all making speeds.

Reduces "time out" for interruptions. Smooth running SYCO Units drive at your maximum drying capacity.

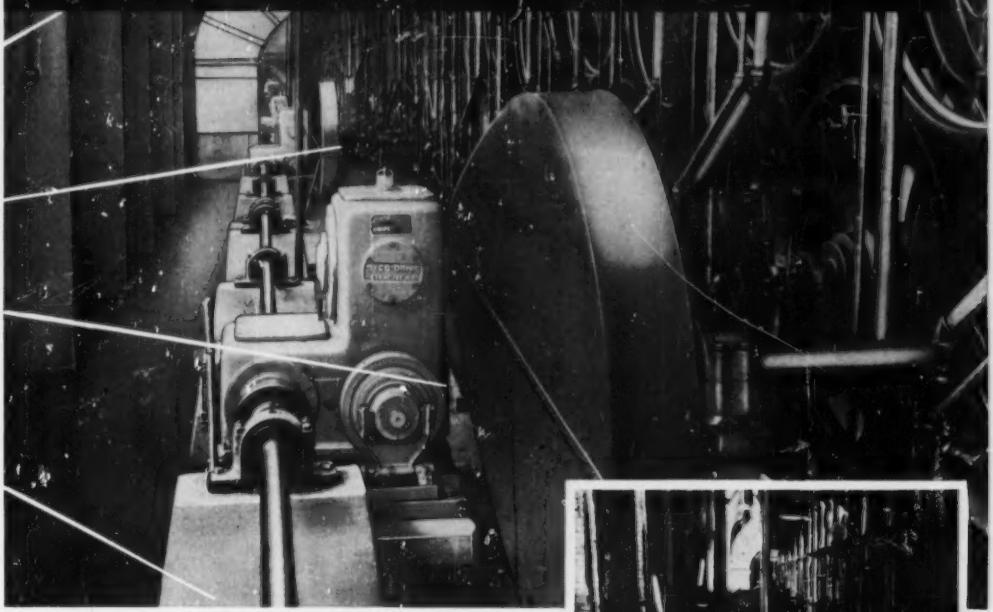
Thus greater tonnage of controlled quality paper.

Top — Press section of a board machine — Syco-equipped. Columbia Box Board Mills, Inc.

Bottom — Same location with old open gear drives.

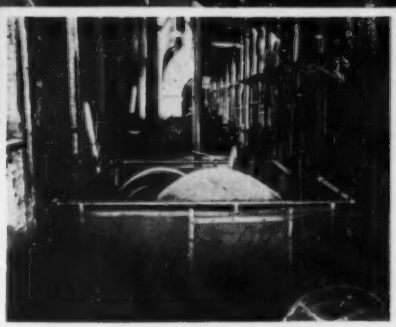
Send for a SYCO Drive engineer — No Obligation — Write!

Saves Space ... Increases Production



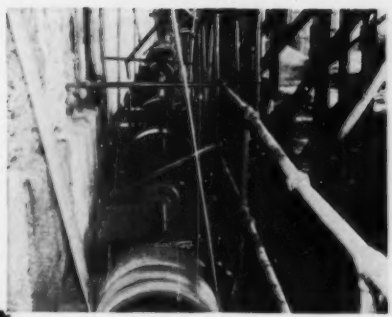
CARTHAGE PAPERMAKERS, INC.

SYCO DRIVES require less space than old-style cone pulleys and belts. Note the clean, compact, all-enclosed mechanism of the SYCO. Each unit clutches in or out independently — permits precise, separate control of speed on each section.



SYCO Drives save space . . . up to 50% of the floor space required by other drives is freed by the compact, self-contained SYCO Drive. Eliminate overhead shafts, pulleys, idlers, countershafts, open gearing, belts, belt guards, superstructures, ladders and catwalks.

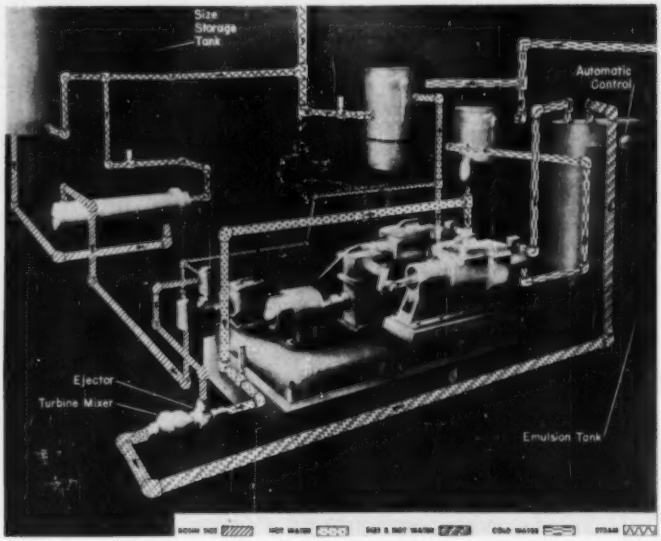
The backtender moves safely and more efficiently about the SYCO-equipped mill.



Same mill with old-style drive, requiring parts of two floors.

SYCO MANUFACTURING CORP.
Syracuse, N. Y.

Equipment & Supplies



Flow chart of Hercules automatic emulsion process for rosin size.

Automatic Emulsifying Process

The Automatic Emulsifying Process for rosin size is said to provide a size emulsion of greater uniformity of concentration and quality, to broaden the field of application for special sizes formerly considered impractical because of limited emulsion stability, also to reduce labor costs and space requirements. Utilizing a Triplex Unit consisting of three proportioning pumps driven: by a single motor, the three components necessary for proper emulsification of rosin size—size, hot water and cold water—are delivered at definite predetermined rates, the manufacturer states. Each pump of the Triplex Unit is individually adjustable as to output to assure maximum flexibility in meeting the varied conditions required for emulsifying specific grades of rosin size. Flow chart illustrated follows the flow of size through the process. Paste rosin size flows from storage tank through heat exchanger where the temperature is brought to a predetermined value (controlled automatically by temperature regulating valve). The hot size then flows into the rosin size pump of Triplex Unit where it is pumped to an emulsifying unit known as the Ejector. At the Ejector it is combined through Venturi sections with a stream of hot water to form the primary emulsion. (Venturi sections of Ejector are constructed to give maximum mixing of size and hot water.) This primary emulsion flows through the Turbine Mixer—a cylindrical chamber containing spiral rotating baffle—where further mixing takes place. From the Mixer, the emulsion flows to a small storage tank with capacity of four to six hours mill supply where it is diluted to its final concentration with cold water from the third pump of the Triplex Unit. Emulsion supply tank is equipped with float control device which starts and stops the motor of the Triplex Unit as the emulsion level in the tank drops or rises to control points, thus making the system function automatically. Size emulsion is drawn from supply tank as needed. It is said that when properly installed the only labor required for the automatic process is the preventive maintenance customary for comparable mechanical equipment. Great uniformity of emulsion results from elimination of personal operator variables and use of fresh instead of variable or excessively aged emulsion. Other advantages are said to be the drastic reductions in emulsion storage capacity and in floor space requirements, also use of low instead of high pressure steam. For details on layout, construction capacities, etc., write to Hercules Powder Co., Wilmington, Del.

CMC

CMC (sodium carboxymethylcellulose) is described as a free-flowing, white granular powder with varied applications for the paper industry. During the past year, its adhesive and film-forming properties and grease resistance are reported to have made possible important contributions in the manufacture of paper and paperboard: surface treatment to increase its strength, and coating to provide grease resistance. Experimental and commercial tests are said to show that calendar-applied CMC is capable of producing a 5 to 20 percent increase in Mullen and tensile strength on board produced from furnishes of waste paper, groundwood or deciduous pulps, the average increase ranging from 10 to 12 percent. As a surface treatment for drinking cup stock and other boards and papers subjected to subsequent waxing operation, it is said to reduce wax consumption and noticeably improve strength qualities. A recent development now being tested is its replacement of animal glue, as applied to rag-content bond and ledger papers to strengthen them and give finish and rattle. Brightness of paper treated with CMC is said to be greater than that treated with glue. Other improvements obtained by surface application of the chemical are reported as increased stiffness, smoothness, gloss, improved feel, decreased fuzziness, and increased surface strength. Degrees of grease resistance in the range required for high quality gloss ink printing or for resisting penetration of wax can be achieved easily through calender application of CMC to paperboard and heavy weight papers, it is stated. (An extremely high degree of grease resistance cannot be achieved by calender boxes alone, but requires a subsequent independent coating operation.) For details and prices write to Hercules Powder Co., Wilmington 99, Del.

Trans-Flo Freight Car

The Trans-Flo freight car was produced to meet the problem of bulk shipment of granular products. Roughly, it is described as a compartmented freight car having 12 separate hoppers contained within a framework of steel side and end members. Loading is through double hatches at the top of each hopper. The inner hatch includes special filter device; the outer seals the opening. Car is unloaded by an air suction device at the bottom of each hopper.

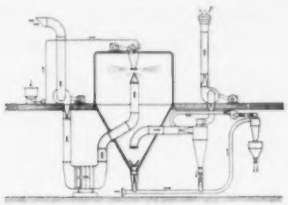
Overall length is 53 feet, capacity approximately 2900 cubic feet equivalent to fifty to sixty tons of milled flour. Designed to eliminate all necessity for introducing any internal means for loosening the commodity or for breaking bridges that have formed; also to assure transportation of material without contamination by foreign substances.

Originally developed to move flour from National Biscuit Company's Toledo mill to Atlanta, Ga., bakery, the car is said to have met crucial tests for unloading. It is expected to prove invaluable for shipment of cereals, plas-

tics, chemicals, etc. For details and prices write to General American Transportation Corp., Field Bldg., Chicago, Ill.

Niro Spray Dryer

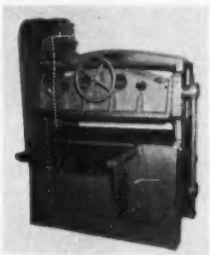
Niro Spray Drying Equipment, of Danish design, has now become available in the U.S. Outstanding feature of the Niro method is said to be its specially designed, high-speed rotary head which ejects the liquid product



as a mist into the drying chamber. Circulating hot air seizes the mist as it enters the chamber and instantaneously evaporates its water content. The dry content falls to the bottom of the chamber as a fine powder and is funnelled out as a finished, easily soluble product ready for packaging and sale. It is stated that the atomizer produces a consistently uniform powder, that drying is accomplished at a temperature so low that the original properties of the product are in no way impaired, also that powders with high bulk densities can be produced when required. Reliable, trouble-free operation is said to result from the two-stage design, that clogging does not develop even when drying viscous substances of pasty structure or under other severe working conditions. The manufacturer believes the system may bring about important simplifications of production methods in the processing of paper and paper products. Preliminary over-all production planning is offered through consultation and engineering services. For details and prices write to Niro Corp., 52 Broadway, New York, N. Y.

Die Cutting Press

The Die Cutting Press for paper, textiles, and rubber is described as heavy-duty, hydraulically-operated, re-



mote control, 34 inches by 60 inches, capable of operating at 15 strokes per minute. It is stated that finger-tip pressure permits the operator to move an hydraulically-operated lever, located conveniently alongside the front roll. The lever operates friction disc clutch and a large rugged brake. With complete lever control of the press, the operator can easily jog the head in up and down positions or operate the machine continuously or intermittently. Oversize clutch and brake permit instantaneous start and stop operation. All moving parts except the head are enclosed. For details and prices, write to Standard Machine Co., Mystic, Conn.

Plasticizers

Plasticizers for vinyl and other synthetic resins will be manufactured in substantial volume at new facilities now under construction as part of the $3,000,000 Avon Lake, Ohio expansion of B. F. Goodrich Chemical Co., it has been announced. Initial operations are scheduled for the second quarter of 1949, and trial quantities will be available within the next few weeks from the company's Avon Lake experimental station pilot plant. For details write to B. F. Goodrich Chemical Co., Cleveland, Ohio.

* * *

Eight Experts Leeturing

ORONO, Me. — Eight experts in the field of pulp and paper making have recently participated in the lecture program in Pulp Technology at the University of Maine, and three more speakers will address the students and faculty members during January.

The series of lectures has been arranged by Professor Lyle C. Jenness, head of the department of chemical engineering.

The subject of chlorine bleaching is to be presented by N. R. Phillips and Dr. John L. Parsons of the Hollingsworth & Whitney Co., Waterville, Maine. Mr. Phillips lectured on January 5 and Dr. Parsons will lecture on January 12. Elmo B. Stevens, of the same company, will speak January 19 on Personnel Management.

Other recent speakers and their subjects were as follows: J. G. L. Caulfield, assistant director of the Eastern Corp., Bangor, Maine, "Sulphite Pulping"; Henry J. Perry, consulting engineer, New York City, "Semi-Chemical Pulping"; Dr. T. J. Werner, of the S. D. Warren Co., Cumberland Mills, Maine, "Caustic Pulping"; T. J. Carlin, mill manager, Northern Kraft Corp., Howland, Maine, "Kraft Pulping"; E. W. Keith, superintendent, Soda Division, Penobscot Chemical Fibre Co., Great Works, Maine, "Caustic Pulping and Black Liquor Evaporation." John C. F. Darrah, of the same company, continued this discussion at another meeting. Frank W. Roberts, assistant chief engineer of the S. D. Warren Co., "Chemical Recovery"; Leonard A. Pierce, chemical engineer of the St. Regis Paper Co., Bucksport, Maine, "Peroxide Bleaching."

Obituary

Michael R. Moran, 79, for many years an executive of the Central Paper Co., Muskegon, Mich., died of coronary thrombosis enroute to his office on December 20. At the time of his death Mr. Moran was executive assistant to C. W. Smith, Central's president. Surviving him are his widow, the former Miss Anna E. Smith; two sisters, Mrs. James T. Ketchum and Mrs. Albert Christoffersen; and a brother, Patrick Moran.

John Howard Draper, 65, vice-president of Draper Brothers Co., Canton, Mass., died on December 17 in West Palm Beach, Fla. Mr. Draper was associated with the Draper Brothers Co. for 45 years. Surviving are his widow, Mrs. Florence (Bullock) Draper, two sons, John H. Draper, Jr. and Charles N. Draper; two daughters, Mrs. Eliot French and Mrs. George Welsh; and three brothers, James B., Joseph P. and Paul A. Draper.

Edwin M. Palmer, 53, manager of the New Orleans branch of the Graham Paper Co. for the past 20 years, died on December 24 at Baptist Hospital. Mr. Palmer, a native of New Orleans, is survived by his widow and two sons.

James L. Reynolds, 58, yard superintendent for the Consolidated Paper Corp., for the past 30 years, died in a Pembroke, Ont., hospital on December 23 following a short illness. He is survived by his widow, three sons and two daughters.

George Breeze, 75, a salesman for Geo. W. Millar & Co., Inc., New York City, died on December 24, 1948. Mr. Breeze had been in the employ of the Millar organization since 1896.

Popularizing Paper Plates

NEW YORK—The Paper Plate Ass'n., with headquarters at 122 East 42nd street, is inaugurating a national advertising campaign starting in February, an industry slogan-emblem will appear in *Better Homes & Gardens, Good Housekeeping, Ladies' Home Journal, House Beautiful* and *American Home* to remind housewives of the economies and advantages of using paper plates. Supplementing this will be schedules in paper, grocery, drug, stationery and other trade papers.

William F. Kegley of Paper Art Co., Inc., Indianapolis, is chairman of the Association's merchandising committee. Other members are Ed Phillips, Sutherland Paper Co., Kalamazoo, and Art Bowes, Bowes Industries, Inc., Chicago.

Plow Removes Chips

THREE RIVERS, Que.—The Joint Production Committee at the St. Lawrence Paper Mills Ltd., has brought another production improvement to light. Adrien Laprisse, an employe of the company, was recently presented with a substantial cheque for a suggestion to improve production. A hinged plow, constructed mostly from scrap, travelling on a channel iron beam was suggested by Mr. Laprisse and discussed at a Joint Production Committee meeting. It was put into operation to replace a board with stops on each side of the belt conveyor. The plow removes the chips from the conveyor belt at the digestor house chip bin. It is reported to do "a perfect job" of cleaning the belt completely and to eliminate the need for sending men to the chip loft to shovel the chips back.

During the months the Committee has been functioning, numerous useful suggestions emanating from its members have been acted upon. Management members of the Committee have stated that valuable suggestions have been received and the labor members of the Committee have expressed appreciation of the manner in which the suggestions have been recognized.

The two unions having the agreement in this plant are Local 234 of the International Brotherhood of Paper Makers (AFL) and Local 136 of the International Brotherhood of Pulp-Sulphite and Paper Mill Workers (AFL).

No Tax On Hog Fuel

OLYMPIA, Wash.—The state supreme court ruled on December 7 that wood waste used for fuel at woodworking plants is not subject to the state manufacturer's or compensating taxes. The action affirmed a decision by the Thurston county superior court.

The lower court had held that Buffelen Lumber & Mfg. Co., of Tacoma should recover from the state for taxes paid on "hog fuel" burned at its plant.

The state tax commission had denied "hog fuel" was a waste product. The commission appealed, contending the fuel was manufactured by the company.

The high court held the company was not in the business of manufacturing hog fuel. It also ruled that the burning of the fuel in company furnaces did not constitute a commercial use which would have made it subject to the compensating tax.

White Spruce Factor

OTTAWA—Canada's pulp and paper industry, which provides more American dollars per annum than any other, is largely dependent on the supplies of white spruce with which the eastern provinces are richly endowed, states Foreign Trade, Department of Trade and Commerce, Canadian Government, emphasizing exports of newsprint in 1947 were valued at $342,000,000, while shipments of pulpwood amounted to $32,000,000. Other items produced by the "Christmas Tree" family include wood pulp, wallboard of pulp and fibre, paper board, book paper, wrapping paper, writing paper, paper bags, cartons and boxes, wallpaper, roofing and building paper, handkerchiefs, napkins, and paper towels, tissue paper and toilet paper.

This report states that wood, wood products and paper contributed, as a group, 32 per cent of Canada's total exports in the preceding year and 52 per cent of all shipments made to the United States, adding that the overall percentage is unchanged for the first first ten months of the 1948 calendar year, exports of wood, wood products and paper amounting in the aggregate to $791,000,000.

Letters

Dear Mr. Heitzeberg:

As a subscriber to the *Paper Trade Journal*, and as one of the few mills in the United States manufacturing ground wood pulp, we are writing you relative to quoted markets for pulp.

Our quarterly contract prices are based on the quotations in *Paper Trade Journal* and/or confirmed by U. S. Pulp Producers Association, so you can readily see that any mention of market price is of vital concern to us. In recent issues you have mentioned that groundwood pulp was being offered from Canadian sources at a price of $75 delivered in the Boston market. This establishes a figure definitely in a buyer's mind, even though this price is not representative of contract market pulp being offered in the current market. These prices, of course, are reflected in your quoted market prices for Domestic and Canadian Pulp and imported pulp, which figures are representative of actual markets prevailing at this time.

During the early postwar years groundwood pulp was selling at anywheres from $150 to $250 per ton for spot deliveries as against quoted market prices at that time of around $80 to $85. As we recall, no mention was ever made of these spot sales, which were not representative of the true market.

The main competition any manufacturers of American groundwood pulp have comes from Canadian producers. We know of sales in this market which have been made within the past month at a cost of $98 delivered for a relatively high moisture content groundwood. This same source has regular long-term contracts at a price of $87 delivered.

We are writing this letter to call to your attention the fact that it is extremely important to us a U. S. manufacturer of groundwood pulp to have any market quotations in your weekly *Paper Trade Journal* as representative as possible of actual markets prevailing at the time for contract pulp.

K. S. DICKINSON
President
Tomahawk Pulp Co.
Appleton, Wis.

Both the PRICES page and TRENDS give as accurate a picture of the market as we can obtain through unremitting, daily inquiry in New York. Information from other cities comes through correspondents and will always be indicated as "reported".

Canadian Payrolls

OTTAWA—The latest nation-wide survey by the Canadian Government reveals that the average weekly salaries and wages paid in the pulp and paper products manufacturing industry amounted to $5,666,556 at October 1, 1948, and the average weekly salaries and wages on the same date reached $48.71 compared with $43.63 on October 1 of the preceding year, with the average hours per week reported at 45.5 and 46.0 on October 1 of 1948 and 1947 respectively, and the average hourly earnings at 105.1c and 92.4c on October 1 of 1948 and 1947 respectively.

Employment in this industry stood at 144.3 at October 1, 1948, compared with 140.8 on the same date of the previous year and payrolls at 236.2 on October 1, 1948, against 207.2 on October 1, 1947, based on June 1, 1941, being equal to 100.

Men comprised 80.8 percent and women 19.2 percent of the persons employed in this industry on October 1, 1948, whereas on the same date of the previous year men made up 80.6 percent and women 19.4 percent.

Canadian Carloadings

OTTAWA—Car loadings on the Canadian railways of woodpulp and paper increased to a cumulative total of 213,740 cars from the first week of 1948 until the week ending December 11 compared with 206,923 cars in the similar period a year ago ending week of December 13, according to the latest report of the Canadian Government. The Eastern Division accounted for 184,819 cars this year as against 179,694 cars a year ago and the Western Division for 28,921 cars compared with 27,229 cars last year in the same period.

Cellulose Imports Drop

OTTAWA—Canadian imports of cellulose products dropped to $383,000 during October this year compared with $465,000 a year ago and totalled only $3,565,000 in the first ten months of 1948 as against $4,631,000 last year in the corresponding period, according to the latest report of the Canadian Government.

Gypsum Managers Meet

BUFFALO, N. Y.—National Gypsum Co. plant and operations managers from all parts of the country met in the company headquarters here for a conference with executives, December 13-17. Lewis R. Sanderson, vice-president in charge of operations, presided at the general meeting opening the conference.

Danish-Czech Deal

WASHINGTON—Under an agreement running to August, 1949, Denmark will export casein up to approximately $1,000,000 in value to Czechoslovakia, in exchange for chemical products, it is officially reported.

POWELL VALVES start their 103rd year of service to Industry

—and the Powell record of satisfactory performance throughout all the past years is your guarantee for the future.

A century is a long time to concentrate on making valves—and nothing but valves. But it's not only important *how long* you've been doing something but also *how well.*

The fact that, in all these years, Powell has never failed to produce the *right* valves to satisfy every industrial need, is real "service."

As we start our 103rd year, there's a Powell Valve of correct design *and material* for every one of your flow control requirements. And, as new conditions bring new demands, there'll be Powell Valves to meet them.

Fig. 1893—Flanged end Gate Valve designed and developed especially for Paper Mill service. Body, bonnet and yoke are cast of 3½% Nickel Iron; screwed-in seat rings are of 18-8 SMo; solid wedge is made of Ni-resist.

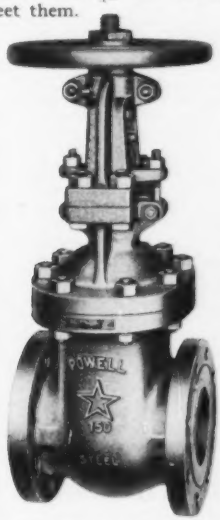


Fig. 1503—Class 150-pound Cast Steel Gate Valve with flanged ends, bolted flanged yoke, outside screw rising stem, tapered solid wedge.

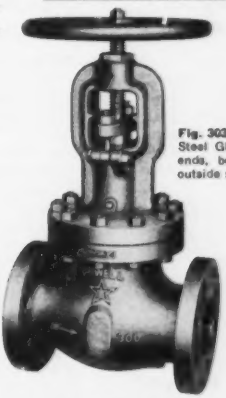


Fig. 3031—Class 300-pound Cast Steel Globe Valve. Has flanged ends, bolted flanged yoke and outside screw rising stem.

Fig. 1259—125-pound All Iron Swing Check Valve with flanged ends, bolted flanged cap and regrindable, renewable iron disc.

Fig. 375—200-pound Bronze Gate Valve. Screwed ends, union bonnet, inside screw rising stem and renewable "Powellium" wear-resisting nickel-bronze disc.

The Wm. Powell Company, Cincinnati 22, Ohio

DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

POWELL VALVES

NYU Paper Courses

NEW YORK—New York University's adult unit, The Division of General Education, will offer four courses during the coming spring term in its program of study in the field of paper, pulp and printing. The program will be under the direct supervision of Assistant Professor Sidney G. Roth who is in charge of technical studies for the Division of General Education. Courses to be given in the spring term will include: Survey Course in Pulp and Paper, Basic Course in Printing Inks and Processes, Seminar in Processes of Inks, Paper and Printing; Lithographing Processes and Materials.

The Survey Course in Pulp and Paper, meeting on Wednesdays, will be led by Frederick C. Clark, consulting engineer and formerly president of TAPPI. Among guest lecturers in this course will be E. W. Tinker, Vance Edwards, Philip Goldsmith, Norman Bearce, and J. D. Malcolmson.

The Seminar in the Principles of Inks, Paper and Printing will be intended for those professionally qualified to discuss new developments and fundamental problems in these fields. This course, meeting on Wednesdays, will be led by Dr. Gerard Larocque and Dr. Andreas Voet of J. M. Huber Corp. In addition, Harold Annis of the Oxford Paper Co. and John Crosson of the St. Regis Paper Co. will participate.

Courses will begin the first week in February. Information concerning fees, dates and details of the courses can be obtained by writing Professor Roth at the Division of General Education, New York University, 100 Washington Square East, New York 3, N. Y., or by calling SPring 7-2000, Ext. 292.

Paper, Board for Ireland

WASHINGTON — Paper and paperboard authorizations totaling $130,030 for Ireland, to be procured from both Canada and the United States, have been announced by ECA. The authorization comprises paperboard from Canada, $69,520, and from the United States, $60,510.

Conserve, Filberg Stresses

VICTORIA, B. C.—Robert J. Filberg, president of the International Western Forestry & Conservation Assn., laid emphasis on the need for conservation "from the seedling through to the finished product" at the 39th annual convention of the organization, held here.

Felton Sheds NSRB Post

WASHINGTON — Resignation of George E. Felton, Boston businessman, and former paper industry executive, as director of the Office of Production, National Security Resources Board, upon completion of a six-month tour of duty dating from last June, has been announced by Acting Chairman John R. Steelman, of NSRB.

Mr. Felton will be succeeded temporarily by Edward V. Hickey, also of Boston, who prior to service during the war on various Government boards and agencies here, was engaged in business in Boston, and is a member of the Massachusetts bar.

Dryden Modernization

TORONTO—The Dryden Paper Co., will spend approximately $300,000 on capital account in its 1948-49 fiscal year, according to Managing Director E. L. Goodall, who made the statement to shareholders at the annual meeting.

President F. A. Sabbaton said he was looking forward to better results in the current year than in the 12 months ended Sept. 30, 1948.

A shareholder representing St. Regis Paper Co., stated that the latter company held proxies for 61,175 shares out of a total of 182,000 outstanding. A total of 160,128 shares were represented at the meeting.

Commenting on the St. Regis holdings, the shareholder said he felt this company should have some representation on the board, but did not wish to press the demand in view of the majority held by the management. He asked that his shares be excluded from the vote electing the board of directors.

Mr. Sabbaton stated that further capital expenditures could be made on the company's property to reduce costs. Whether directors decide to proceed with such projects, will depend on the money market and general business conditions. He added that he felt industrial growth in Western Canada would provide an increasing market for a major part of the company's products.

Mr. Goodall said the new No. 4 paper machine which started production last January has shown good results despite high installation costs. Daily capacity is being steadily increased.

H. J. Humphrey was added to the board of directors; others were re-elected. Mr. Humphrey is also a director of Woods Manufacturing Co.

Cellulose Fibers Inc. Lease

HOLYOKE, Mass.—Cellulose Fibers, Inc.,' on December 29 took a ten-year lease on 71,586 feet of space in the building at Main and Jackson Streets for ten years beginning January at an annual rental of $10,738.08, payable at the rate of $894.94 per month. The lease, filed in the Registry of Deeds in Springfield, is signed by Robert W. Pattison, president of Cellulose Fibers, Inc., and David H. Barowsky, president of Barowsky Co., Inc.

Mr. Pattison resigned as superintendent of the Riverside Division of the American Writing Paper Corp., last May to head Cellulose Fibers, after having been with American Writing for 24 years.

The new firm produces cotton half-stock out of cotton waste, along with other cellulose products.

Merchant Ass'n. Elections

CINCINNATI — John L. Richey, who is secretary and counsel to a number of paper merchants associations in addition to serving in the capacity for the Paper & Twine Ass'n., reports the following officers recently elected to three of them:

Wisconsin Paper Merchants Ass'n.—Ted Schulteis of John Rauschenberger Co., president; Ed Kaas, American Paper Co., vice-president; Charles Hafemann, Hafemann Paper Co., treasurer (all of Milwaukee); Mr. Richey, secretary-counsel.

Illinois State Paper Merchants Ass'n.—R. W. Peterson, Peterson Paper Co., Davenport, Iowa, president; Sid Cain of S. V. Cain, Inc., Peoria, Ill., vice-president; Mr. Richey, secretary-treasurer and counsel.

Chicago Paper Ass'n. — William Chukerman of J. Chukerman & Sons, president; Joseph Druth of Chippewa Paper Products Co., first vice-president; Herbert Pusheck of Abana Products, second vice-president; Charles Kiolbasa of Charles Paper Co., treasurer; Mr. Richey, secretary-counsel. For chairman of the board of directors, Robert E. Knox of Knox & Schneider; and for directors in addition to the above: Herman Landerman of Levin Bros. Paper Co., Samuel Weil of Joseph Weil & Sons, Louis Brown of Atlas Paper Co., and Fred Rudolphy of Hollis & Duncan, all of Chicago.

Scott Plant Work

CHESTER, Pa.—The Scott Paper Co. has been engaged in a program of plant alteration, modernization and improvement at all its plants. Work on the program progressed satisfactorily during the latter half of 1948, the company states.

At the Chester plant a new hydrapulper has been installed; a pilot plant for bleaching pulp is now in operation; and two new Yankee dryers have been installed.

A new shipping conveyor is under construction at Fort Edward, N. Y., where work will begin this month on a new pulp preparation system. A program for rebuilding one of the paper machines is scheduled for completion about July 1. The reconstruction should increase the machine's capacity by approximately 50 percent.

Construction of a new building which will house additional finishing equipment at Scott's Cut-Rite division at Sandusky, Ohio, where production of Cut-Rite is expected to be materially increased.

Work at the company's Marinette, Wis., plant is proceeding according to schedule and pulp mill improvements were expected to be in operation by January 2. New laboratory facilities were completed in December. In addition, a new large power distribution job has been engineered and construction is under way.

Take-Over Sought

HOLYOKE, Mass.—Paper manufacturers were informed December 13 that the board of aldermen will be asked to approve the plan of the municipal gas and electric department to take over the Holyoke Water Power Co. dam—which represents the century-old indentured water rights of Holyoke paper mills.

The aldermanic power and light committee has filed with City Clerk Joseph Jubinville, Jr., an order requesting the General Court and the Governor to approve the gas and electric department bills now in the legislature asking authority be given it to obtain a license from the Federal Power Commission to develop the hydro-electric potential at the Holyoke dam.

The request also asks for the right to issue revenue bonds to pay for the project. The order carries provision that the city and surrounding towns shall not be deprived of tax revenues for the project.

Manager Francis E. King of the gas and electric department introduced a similar bill in the legislature last year, but withdrew it when the aldermen disapproved and the gas and electric commissioners failed to support him.

Safety Record Acclaimed

HOLYOKE, Mass.—Employes of the White & Wyckoff Mfg. Co., were recognized for their outstanding safety record Dec. 14, when they were awarded a certificate by the American Mutual Insurance Co.

The certificate is the first presented in the Western Massachusetts area since the war's end. It commends the personnel for their "diligent efforts in successfully preventing lost-time accidents during a continuous period of twelve months." There were 512,353 man hours of work without a mishap during that period.

This is the third award made to White & Wyckoff employes. They previously were given a banner by the Massachusetts Safety Council for being leaders in safety in their industrial group, and a commendation by the Connecticut Valley Safety Council. The record set at the concern is still unbroken.

Alberta Mill Planned

OTTAWA—With a group of U.S. and Canadian publishers said to be associated with the project and a market for its newsprint likely within the group, it is understood that R. O. Sweezey and associates plan to construct a pulp and newsprint mill in either Calgary or in Edmondton, Alberta, and this may be started early in 1949, calling at present for the establishment of a newsprint machine and pulp equipment with a daily output of about 200 tons, though another may be added later. It is estimated that the cost will be between ten and 15 million dollars.

Accompanying these negotiations is a report that a new chemical pulp process may be used. It is also expected that pulpwood and power costs may be lowered for the plant through arrangements under consideration compared with prevailing costs.

Paper NAMsters Busy

NEW YORK—N. F. Youngman, James L. Coker and Cola G. Parker, three executives prominent in the paper industry, have begun their service as 1949 members of the board of directors of the national Ass'n. of Manufacturers, following their election at the recent 53rd annual Congress of American Industry, held in this city, and sponsored by the NAM.

Newly-elected to serve as an NAM state director for Oregon is Mr. Youngman, vice-president of the Crown Zellerbach Corp., Portland. Re-elected to serve as NAM state directors for South Carolina and Wisconsin, respectively, are Mr. Coker, president of the Sonoco Products Co., and Cola G. Parker, president of the Kimberly-Clark Corp.

Adopts New Name

DALLAS, Tex.—The Pollock Paper & Box Co. of Dallas, Tex., founded in 1918, has changed its name to Pollock Paper Co. The new name will also apply to the subsidiary Southern Waxed Paper Co. of Birmingham and Atlanta, and the Waterproof-Ohio Paper Co. of Columbus and Middletown, Ohio.

"The revision is made without change in ownership, management or policy, but entirely to simplify contacts with customers and suppliers," Lawrence S. Pollock points out. Other officers of the firm are Leslie L. Jacobs, executive vice-president; Ben F. Lacy, vice-president; and Henry S. Jacobus, secretary-treasurer.

Plymouth In New Home

HOLYOKE, Mass. — The Plymouth Paper Co., now under new management, has moved from Main St. where it has been located since 1888 to the former Farr Alpaca Co., building on Cabot St.

Miss M. Alice Perry is president. She succeeded her father, the late Walter B. Perry. Her sister, Beatrice Perry, is associated with her in a managerial capacity as is Joseph W. Shaw, who recently was elected a director. James C. Midgley is treasurer. The fifth member of the Plymouth Paper Co., team is Nathan Roberts.

Toys for Hammermill Tots

ERIE, Pa.—Nearly 1,500 children of Hammermill Paper Co. employes, accompanied by their mothers, visited the East Lake road plant at noon on December 23 to receive their annual Yule treat. The local paper plant began its annual custom of presenting toys to children of employes some 30 years ago.

Cascade Sales Conference

NORTH ADAMS, Mass.—The semi-annual sales meeting of the Cascade Paper Co., of this city was held December 28 and 29, with conferences at the company's offices, 114 Holden Street, and at the Richmond Hotel. President Robert O. Wells said ten sales representatives, whose areas cover 15 states, attended the meeting. They included: Owen Haggerty of North Adams; William Scarborough of Williamstown; Edward Coster of Pittsfield; John Porter of Columbus, Ohio; Jerry Roth of Quincy, Mich.; Perry Rowe of Baltimore, Md.; Clinton Smithdeal of Raleigh, N. C., and Carle Bryant of Pawtucket, R. I.

Sanitary Sells 5 Branches

SAN FRANCISCO — Sanitary Products & Paper Co., a department of the Crown Zellerbach Corp., which distributes products of its Carthage, N.Y., mill and those of other manufacturers, has sold its five branches to individual business groups in New York.

The Syracuse, N. Y., branch was purchased by W. C. Swan, former branch manager, and seven employes; the Brooklyn branch was sold to A. L. Scharf, former manager of the Sanitary Products department; the Philadelphia branch was sold to the C. L. Ward Co.; the Pittsburgh branch to the Morris Paper Co.; and the Buffalo branch to the Hubbs & Howe Co.

Miss Moses Resigns

WEST SPRINGFIELD, Mass. — Miss Madeline Moses, daughter of the late Horace A. Moses, founder of Strathmore Paper Co., and president of it for 50 years, has resigned as a member of the board of directors of the Strathmore Paper Co., after serving in that capacity for ten years, it was announced on December 20.

Miss Moses will continue to be active in the business affairs of the Rising Paper Co., in Housatonic, where she has also been a member of the board of directors for the past 10 years, and has held the office of vice-president for several years.

Drops Sales Agency

PHILADELPHIA—J. W. Heisley, president of J. Willard Heisley & Co., Inc., 1924 Chestnut street, dealing in paper, pulp and paper makers' supplies, reports to *Paper Trade Journal* that his firm's sales agency with St. Johns Sulphite, Ltd., of Fairville, New Brunswick, Can., has been discontinued. "As heretofore, we are in a position to offer all types of pulp and waste materials for the paper industry," Mr. Heisley states.

Mill To Relocate

COHOES, N. Y. — The Hudson Falls Paper Co., located in the old Granite Mill Building for years, plans to locate in Watervliet with its main office at the Regional Market in Menands. The structure in this city was purchased recently by Empire Distributors, Inc., of Albany.

Purchasing Agents Survey Business*

NEW YORK—The November forecast by industrial purchasing executives that industrial activity would continue to decline in December is now confirmed, with an even greater slowing up than was anticipated. December reports, for the first time since the war, record more production declines than increases, by three to one. Back-order books reflect conditions by a marked falling off, with 50 percent reporting reductions, while 40 percent maintain the same position of a month earlier, and 10 percent show increases. The reports indicate declines more pronounced than would be caused by normal seasonal influences.

Purchasing agents' appraisals of immediate future trends are mixed, but seem to fall about equally into three general groups of opinion:

(1) The present softness is seasonal.

(2) The trend is definitely down and will continue to recede until it reaches a competitive level — not a bust, but a gradual adjustment to lower levels of prices and production.

(3) The short-range, hesitant attitude will continue until Congress meets and the Truman program is known and analyzed.

Commodity Prices: The trend is from a balanced position to softening.

Inventories: Purchased industrial inventories took a sharp drop in December. The largest number in 1948, or 43 percent, report lower December inventories. Those reporting increases most often attribute the cause to production cutbacks and lower employment. Industry winds up the year in a conservative inventory position.

Buying Policy: The close buying policy reported last month—98 percent in the "90-day and under" category—continues, but with some further restriction because more are on a "hand-to mouth to 60-day" coverage. Extended commitments frequently are being canceled. Deliveries on overbought current needs are being deferred.

Specific Commodity Changes: By number of items, there were more products down than up in December. Pricewise, the markets were softening and materials were more quickly available.

Up were: Brass products, electrotypes, ferrosilicon, hand tools, lead pigments, mercury, nitrogen, oxygen, porcelain, rope, shellac, titanium oxide.

Reported down: Alcohol, canvas gloves, China wood oil, coal, paper containers, cornstarch, foodstuffs, fuel oil, furs, gasoline, leather, lumber, vegetable oils, paper, radios, rubber, scrap steel, silver, soap, some textiles.

Hard to get: Lead, copper, zinc, steel, aluminum, ammonia, chromic acid, steel drums, line equipment, nails, nickel, steel office equipment, phenol, pipe, tin.

Easing supply: Fatty acids, alcohol, cement (some areas), better grades of coal, containers (except steel), cotton, food, fuel oil, glycerine, steel scrap, better grades of lumber, paper.

Employment: Definitely off and more than seasonally. Thirty-four percent report layoffs and shorter hours. Unskilled labor reported much easier to obtain. In some areas, skilled workers seeking employment. Fewer strikes reported.

Canada: General business appears to be holding better than in the United States. Production increased but back orders were somewhat down. Price trend lower. Inventories unchanged. Employment down about the same as in the U. S. Buying policy is under 90 days.

* Composite opinion of purchasing agents who comprise the N.A.P.A. Business Survey Committee, chairman, Robert C. Swanton, director of purchases, Winchester Repeating Arms Corp., Division of Olin Industries, Inc., New Haven, Conn.

Canadian Canal Traffic

OTTAWA—The Canadian Government reports that traffic through Canadian canals in November, 1948, showed the following, with figures for the same period of 1947 being in brackets: Sault Ste. Marie Canals, East Bound, Canadian Lock, pulpwood, 8,800 (13,826) tons, Canadian and United States Locks, 26,024 (35,228) tons; Welland Ship Canal, pulpwood, 37,680 (42,886) tons, paper, 28,412 (32,166) tons, wood pulp, 3,759 (7,670) tons; St. Lawrence Canals, pulpwood, 37,914 (66,492) tons, paper, 14,568 (12,411) tons, wood pulp, 3,011 (6,375).

Nepco Foundation Gifts

PORT EDWARDS, Wis.—John E. Alexander, president of Nepco Foundation, reports year-end foundation gifts totaling $10,750 to seven churches in or near Port Edwards and Nekoosa, Riverview Hospital in Wisconsin Rapids, and the Nepco Lake Boys' and Girls' Lodge. Other Nepco Foundation contributions during 1948 included $10,000 to the University of Wisconsin Foundation Centennial Fund, and establishment of a $6,300 industrial fellowship at the University of Wisconsin for the study of insect control in stored pulpwood.

New Miller Line-Up

SYRACUSE, N. Y.—Wesley C. Swan has been appointed general manager of the Miller Paper Co., Inc. Mr. Swan was with the Sanitary Products and Paper Co., division of the Crown Zellerbach Corp., for more than 25 years.

The Miller Paper Co., Inc., recently purchased from W. C. Swan, the Syracuse branch of Sanitary Products, which will operate under the name of Central New York Sanitary Products & Paper Co. R. C. Fishew will be branch manager of the unit.

Expects a Great Year

BUFFALO, N. Y. — National Gypsum expects a great year in 1949, President Melvin H. Baker told 500 employes of the company's Buffalo office at their Christmas party at Hotel Statler.

"We expect to sell all the products we can make in 1949," he said. "And now that we have completed our post-war expansion program, we will be producing more than ever before. Every one of the company's 23 plants made a profit in 1948, National's greatest year to date. During 1949, with all plants reaching a maximum in production, we will do even better."

Survey Discloses Declines

OTTAWA—The Canadian Government announces that its latest survey reveals the inventory position in pulp and paper mills throughout Canada recorded its first advance in Sept., 1948, after showing a continuous decline since March, standing at 125.6 in Sept., as against 124.8 in the preceding month. With March at 146.3, the other months of 1948 were 142.3 in April, 135.4 in May, 133.5 in June, and 128.5 in July, all based on Dec., 1946, being equal to 100. In these same periods of the previous year, such inventories stood at 105.3 in March, 105.2 April, 101.2 May, 102.9 June, 99.5 July, 97.1 August, 98.4 September.

Halifax Expansion

ROANOKE RAPIDS, N. C.—Construction is proceeding rapidly on the superstructure of the 200-ton recovery unit being built for the Halifax Paper Co., by C. M. Guest & Sons of Anderson, S. C. and Greensboro, N. C.

The steel frame is erected and the intermediate concrete floors and platforms have been poured. Installation of the Combustion Engineering Co. recovery boiler is expected to start immediately after the first of the year.

Eagle Depot Burned

OTTAWA — Canadian International Paper Company's Eagle Depot, 25 miles west of Maniwaki, was destroyed by fire on December 26 with an estimated $25,000 damage. Sylvio Plouffe, 42, caretaker, was badly burned.

Tells of Safety Congress

WESTFIELD, Mass. — George Goodrich of the Strathmore Paper Co. spoke recently before the Hampden County Accident Prevention Council, reporting highlights of the National Safety Congress just previously.

Revised Official Line-Up

NEW YORK—Combustion Engineering-Superheater, Inc., (reported in the December 30 issue of *Paper Trade Journal*, page 39) on January 3 informed the publisher that the following list of officers should be substituted for those listed by the company at the time the original statement was issued.

"Officers of the new company are: Frederic A. Schaff, chairman of the board and vice-chairman, executive committee; Samuel G. Allen, chairman, executive committee; Joseph V. Santry, president; Martens H. Isenberg, executive vice president; Harold H. Brery, vice-president in charge of finance. Vice-presidents: Wilbur H. Armacost, George D. Ellis, Amaziah J. Moses, John S. Skelly, Otto W. Strauss, Donald S. Walker, Albert C. Weigel, Arthur Williams. Secretary and assistant treasurer, Irving B. Swigart. Assistant secretaries: Thomas F. Morris and Francis J. Dolan. Assistants to chairman: Thomas F. Morris and Frank R. Fitzpatrick."

New PICCO Plant Planned

CLAIRTON, Pa.—Plans for erection of a $1,000,000 distillation plant on a five-acre site near West Elizabeth, Pa., have been disclosed by the Pennsylvania Industrial Chemical Corp. of this city.

In about six months the firm expects to complete installation of a distillation unit to separate precision fractions of aromatic oils, one of the initial processes in the development of resins. These resins are used in the paper and other industries.

The company is said to be the only U. S. manufacturer of synthetic hydrocarbon resins produced from turpentine. Another line of resins, using styrene as the basic raw material, is also made.

"Live" Christmas Tree

A realistic Christmas tree of green tissue paper sprang out to greet recipients of the December issue of *The Messenger* who opened the issue to its center-fold. This well-conceived publication is the house magazine of Black-Clawson, Shartle and Dilts, and of their Canadian associate, Alexander Fleck, Ltd.

"Since the magazine goes to paper makers, the idea of the metamorphosis of the Christmas tree into paper products for Christmas usage is apropos," O. A. Keyser of the Parker Advertising Co., which has been [illegible]ing and producing that publication for more than 20 years, pointed out.

Cyanamid's Morris Retires

BOSTON — Daniel B. Morris, of the local office of the American Cyanamid Co., retired on December 31.

Mr. Morris, during the early portion of his career, was associated in various capacities with the Oxford Paper Co. in Maine and in New York City. He was representing the Kalbfleisch Corp. throughout New England when American Cyanamid Co. acquired that concern in 1929. He continued with the new company, handling the distribution of Cyanamid products to the paper industry in New England from that time until the present.

Coldwell Named President

NEW YORK—Ford, Bacon & Davis, Inc., engineers of this city, Philadelphia, Chicago, and Los Angeles, on January 1, elected E. S. Coldwell as president, succeeding James F. Towers, who will continue actively as chairman of the board. Mr. Coldwell will at the same time succeed Mr. Towers as president of the Ford, Bacon & Davis Construction Corp., Monroe, La., a wholly owned subsidiary. Mr. Towers will also continue actively as chairman of the board of the construction corporation.

SKF Names Gotwals

PHILADELPHIA—C. S. Gotwals has been named quality manager of all SKF Industries, Inc., plants, two of which are located here. Smaller units are at Shippensburg, Pa., and Hornell, N. Y.

Charles R. Scott, Jr., in charge of the machining division since 1946, succeeds M. Gotwals as superintendent. W. F. Shedinger will direct operations of the machining division in addition to his duties as head of the ball division. Mr. Gotwals joined SKF in 1915.

Pennsalt International

PHILADELPHIA — Leonard T. Beale, president of the Pennsylvania Salt Mfg. Co., reports organization of the Pennsalt International Corp., a subsidiary which will take over the foreign interests of the parent company. Richard L. Davies is president of the new firm and John H. S. Barr, vice-president. Mr. Davies is assistant to the president of the parent company for which Mr. Barr has been export manager since 1944.

Somervell Optimistic

PITTSBURGH, Pa.—General Brehon Somervell, president of the Koppers Co., Inc., said in a year-end statement that "1949 presents us with more opportunities—and more problems—than most years, but it seems probable that industries with staunch hearts and keen foresight will solve the problems and turn the opportunities into another successful business year."

Names Robinson Div. S. M.

CHICAGO—J. A. Robinson has been named a sales manager for the Transporter Division of the Automatic Transportation Co., 101 West 87th Street.

Form Trundle Subsidiary

NEW YORK — Formation of a subsidiary company, Trundle Associates, Inc., to render a consulting service to pulp and paper companies and associations, is disclosed by the Trundle Engineering Co., consulting management engineers. Offices are in the Graybar Building. The new company will take over the business formerly conducted by the late George A. Ware, who for many years served as cost and engineering consultant to the nation's pulp and paper industry.

Grant Heads Dow Office

NEW YORK—Leo B. Grant is now manager of the local sales office of the Dow Chemical Co. succeeding Ralph E. Dorland who held that position from 1919 until his death last May. Mr. Grant was associated with Dow's magnesium division in Midland, Mich., for 20 years before joining the executive staff of its New York office about a year ago.

Machinery $3,000,000

OTTAWA—In the fiscal year 1947-48, the largest single item contributed by Canada to Newfoundland's imports was pulp-mill and paper-mill machinery valued at $3,000,000, according to R. Campbell Smith, Commercial Secretary for Canada in Newfoundland, in Foreign Trade of the Canadian Government.

Benedict In New Post

PITTSBURGH—F. R. Benedict has been named manager of the headquarters engineering departments of the Westinghouse Electric Corp. He will be responsible for the operations of the industry engineering, the foreign engineering, and the engineering laboratories and standards departments.

Heads Sectional Committee

NEW YORK—The American Society of Mechanical Engineers has named Frank S. G. Williams eastern manager of the Taylor Forge & Pipe Works, as chairman of ASA Sectional Committee B-31, responsible for the American Standard Code for Pressure Piping.

2nd Bagpak Atlanta D.S.M.

ATLANTA—The Bagpak Division of the International Paper Co. has appointed Cedric Crain as its second district sales manager here. Mr. Crain and Richard A. Port, the first district sales manager, are located in Bagpak's branch sales office at 56 Marietta street.

American Ups Terry

DETROIT — Maynard B. Terry has been appointed vice-president of the American Brakelok Division of the American Brake Shoe Co. He will continue to be located at the Division's headquarters here.

Westinghouse Ups Fink

PITTSBURGH—J. C. Fink has been named manager of the industry engineering department of the Westinghouse Electric Corp. He joined Westinghouse in 1927.

Reducing Paper Damage in Transit

By ELLIOTT DONNELLEY

Assistant to the President, R. R. Donnelley & Sons Co., Chicago, Ill.

Reducing paper damage in transit concerns all of us; the railroads in loss of revenue, our customers in increased printing costs, and ourselves in loss of production which also means higher operating costs.

For a great many years R. R. Donnelley's has had a Paper Conservation Committee of members from our purchasing and stock handling departments and our pressrooms. During the war, and years just following the war, with the great shortage of help and the additional amount of work that everyone had to do, our Conservation Committee was not able to be as active as they would have liked to have been.

In the spring of 1947, I returned to R. R. Donnelley's as assistant to the president, after a leave of absence of ten years. During my leave I became a railroad enthusiast. Probably because of my enthusiasm for railroads I spent more time on our railroad receiving docks than I should have. While watching paper being unloaded from the cars I began to realize that a great deal of paper was being spoiled, and started to inquire into the reasons.

In January of 1948, I asked our cost department to get together our 1947 spoilage figures on roll stock. I only requested figures on the roll stock because of the fact that the amount of flat stock that we use is an infinitesimal amount compared to our total tonnage of paper. The figures were astounding. I had the report broken down into the following headings: Total Stock Used, Wrapping Waste, Railroad Damage, Plant Damage, Concealed Damage, Defective Stock, Core Waste, Makeready, and Running Waste. In 1947 we used 447,064,000-odd pounds. The railroad damage was 4,319,000 pounds.

Loss Sources

Wrapper Waste consists of the actual paper used to protect rolls from the time they come off the paper machine until the paper is used. This wrapper is scrapped as soon as it has served its purpose. While I know that everyone here tonight understands what railroad damage usually consists of, I want to clarify what R. R. Donnelley's considers railroad damage. It is that damage that is apparent on rolls as they are unloaded from the cars and before they have been unwrapped. The additional damage found after unwrapping, which is done at the press, is classified by us as concealed damage. By all rights we should put in additional railroad claims for this concealed damage, but in most cases from one week to three months has elapsed since it has been received. It would take the wisdom of a King Solomon to settle such claims.

Plant Damage consists of all the damage that occurs to the rolls between the time they are unloaded from the cars and delivered to the press, including warehousing. Except in the case of one customer, plant damage includes defects in the paper that occurs at the time of manufacture at the mill. For that one customer we have a Defective Damage classification.

Core Waste consists of the paper remaining on the roll cores after the rolls have been completely used up. Where a core is in good condition we can use the paper within ¼" or less of the core itself, however, often when the core has been damaged such as being flattened or the paper near the core has become wet, it will be necessary to leave anywhere from one to six inches. This must be scrapped.

Makeready Spoilage consists of the waste accumulated during the setting up of a press prior to printing.

Running Spoilage covers all the spoiled paper occurring during the printing of a job. Besides general press conditions and the quality of paper, a great deal of this spoilage is caused by web breaks. Web breaks can be caused by many things, however, most important is poor splicing on the part of the mills, cuts and bruises resulting from poor handling in transit or storage, or wet stock. As a rule, 60 to 125 pounds are required to reweb, besides from 15 to 20 minutes of time taken out of production. From these figures, I am sure you can easily understand that three or four web breaks in any one day raises hell with spoilage figures not to mention production schedules.

Returning to our 1947 spoilage figures, the actual cost of the railroad damage in dollars amounted to $364,-418, to which must be added another $67,388 covering the concealed damage, which makes a grand total of $431,806 which we classify as Railroad Damage.

Mr. Bob Fasold of the A.A.R. claim division checked for me the amount of total claims paid by all railroads of the United States on all the damaged paper for the year of 1947. This figure was approximately $750,000.

Our figures, with this figure in mind, began to look somewhat off, as I was sure we were not filing over one-half of the total claims in the U. S. I had our figures rechecked and found that they were correct as far as we were concerned. However, on further checking, I found that we actually make only a small percentage of the actual claims themselves directly to the railroads.

In the majority of cases we pass our claims on to our customers, some of

(Continued on page 52)

Key to Mills Tabulated On Opposite Page

Mill No.	
1	Abitibi Paper Co. Iroquois Falls, Ontario, Can.
2	Bergstrom Paper Co. Nenah, Wis.
3	Champion Paper Co. Houston, Tex.
4	Combined Locks Paper Co. Combined Locks, Wis.
5	Consolidated Water Power & Paper Co. Biron, Wis.
6	Consolidated Water Power & Paper Co. Wisconsin Rapids, Wis.
7	Crocker Burbank Papers Fitchburg, Mass.
8	Crown Zellerbach Corp. West Linn, Ore.
9	Escanaba Paper Co. Escanaba, Mich.
10	Fraser Paper Co. Madawaska, Maine.
11	Gouln Paper Co. Lyons Falls, N. Y.
12	International Paper Co. Corinth, N. Y.
13	International Paper Co. Livermore Falls, Maine.
14	Kimberly Clark Corp. Niagara, Wis.
15	Mead Paper Corp. Chillicothe, Ohio.
16	Mead Paper Corp. Kingsport, Tenn.
17	Oxford Miami Paper Co. West Carrollton, Ohio.
18	Reader's Digest Niagara Falls, N. Y.
19	St. Regis Paper Co. Deferiet, N. Y.
20	St. Regis Paper Co. Kalamazoo, Mich.
21	St. Regis Paper Co. Sartell, Minn.
22	Time Paper Conversion Division Time Coating Mill Kalamazoo, Mich.
23	S. D. Warren Co. Cumberland Mills, Maine.
24	West Virginia Pulp & Paper Co. Williamsburg, Pa.
25	Kimberly-Clark Corp. Neenah, Wis.
26	Maine Seaboard Paper Co. Bucksport, Maine.
27	Mead Paper Corp. Escanaba, Mich.
28	St. Regis Paper Co. Bucksport, Maine.

An address delivered by the author at a meeting of 60 representatives of railroads, newspapers and magazines at the Blackstone Hotel, Chicago, November 30, called by H. M. Hansen, general traffic manager of R. R. Donnelley & Sons Co.

Roll Stock Railroad Damage Paper Received at R. R. Donnelley & Sons Co. Plants at Chicago, Ill., April 1, 1948 to September 30, 1948

Mill	No. of Cars	Total Rolls in Car	Net Weight	Total Rolls Damaged	Cut A/C Shifting	No Apparent Cause	Chafed	Wet Stock	Jammed in Doorway	Cut on Nail	Cut on Bolt	Puncture	Band Cut	Cut on Floor	Cut on Door Post	Cut on Bracing	Cut on Flate	Cut on Toe Block	Cut on Wall	Riding on Foreign Matter	Foreign Matter in Roll	Oil Soaked	Flat Core	Telescoped	Good Stock Through Press	Total Pounds Damage
No. 1	2	72	84,467	2	....	....	97	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	84,370	97
%							.115																			.115
No. 2	12	714	704,249	84	852	900	240	186	....	185	....	....	209	....	164	....	....	27	99	....	49	....	....	....	701,338	2,911
%					.121	.128	.034	.027		.026			.030		.023			.004	.014		.007					.414
No. 3	308	10,962	28,843,638	2,393	14,671	22,348	44,923	7,899	4,336	12,613	7,939	....	425	4,887	11,007	....	1,321	....	850	4,746	....	....	....	5,634	28,699,939	143,599
%					.051	.077	.156	.027	.015	.043	.028		.001	.017	.038		.005		.003	.017				.02		.498
No. 4	227	7,789	10,032,852	451	2,294	5,076	5,517	17,132	266	3,920	1,288	....	335	807	3,409	....	160	....	274	....	....	459	....	....	9,991,916	40,936
%					.023	.051	.054	.171	.002	.039	.013		.003	.098	.034		.002		.003			.005				.408
No. 5	204	7,506	15,420,513	1,435	13,635	3,499	27,846	179	508	6,747	1,925	....	5,876	1,347	2,589	....	565	....	168	80	....	....	....	1,645	15,353,904	66,609
%					.088	.023	.181	.001	.003	.044	.012		.038	.009	.017		.004		.001	.0005				.0115		.432
No. 6	398	15,668	34,317,110	1,701	19,703	8,691	38,265	962	4,753	8,981	5,259	....	4,101	2,558	9,299	....	3,184	....	1,346	....	....	....	....	507	34,209,501	107,609
%					.057	.025	.112	.003	.014	.026	.015		.012	.007	.028		.009		.004					.001		.313
No. 7	40	945	1,602,848	323	4,217	38	3,596	655	....	1,645	....	....	46	....	591	417	....	1,681	893	....	....	....	....	....	1,589,069	13,779
%					.263	.002	.224	.041		.103			.002		.037	.026		.105	.056							.859
No. 8	62	2,291	5,186,845	462	2,994	2,006	7,257	570	504	2,506	1,925	....	124	1,128	2,122	....	971	....	351	....	....	....	....	154	5,164,233	22,612
%					.058	.039	.140	.011	.009	.048	.037		.002	.022	.041		.019		.007					.003		.436
No. 9	182	6,963	14,944,919	738	5,682	3,472	15,520	8,449	369	6,979	1,761	....	1,673	456	2,102	....	235	1,114	98	....	....	....	....	39	14,896,970	47,949
%					.038	.023	.104	.056	.002	.047	.012		.011	.003	.014		.002	.007	.001					.0003		.3203
No. 10	309	15,333	20,177,833	2,004	42,073	11,431	3,598	38,365	2,847	12,077	587	....	4,245	1,856	8,891	....	1,137	155	2,515	....	....	22,470	....	....	20,026,386	151,447
%					.209	.057	.018	.190	.014	.060	.003		.020	.009	.040		.006	.001	.012			.112				.751
No. 11	40	1,637	2,120,060	286	2,062	1,493	2,131	2,117	181	1,688	....	....	338	832	1,150	910	....	1,270	429	107	....	231	....	....	2,105,141	14,919
%					.097	.074	.101	.099	.009	.079			.016	.039	.054	.043		.059	.020	.005		.009				.704
No. 12	102	4,107	5,915,078	266	2,437	6,683	1,468	613	....	965	....	....	....	116	395	215	....	2,705	627	....	....	....	....	....	5,998,851	16,227
%					.041	.113	.025	.010		.016				.002	.007	.004		.046	.010							.274
No. 13	72	2,827	3,112,659	302	3,087	3,945	3,759	6,439	614	3,761	....	....	147	1,864	1,104	....	....	42	146	....	....	....	....	....	3,087,751	24,908
%					.099	.126	.120	.206	.020	.120			.005	.060	.035			.001	.005							.797
No. 14	77	3,889	5,467,424	573	5,520	8,032	3,172	....	511	1,427	....	....	416	575	1,185	168	....	....	376	....	....	....	....	....	5,446,044	21,380
%					.101	.147	.057		.009	.026			.008	.011	.022	.003			.007							.391
No. 15	14	392	806,506	31	583	53	358	181	....	....	....	....	....	....	....	....	....	42	....	....	....	....	....	....	805,289	1,217
%					.073	.007	.044	.022										.005								.151
No. 16	91	2,453	8,240,451	263	5,557	6,059	3,052	5,855	90	4,769	443	....	2,980	1,024	788	....	....	....	268	....	....	....	....	....	8,209,566	30,885
%					.068	.074	.037	.071	.001	.058	.005		.036	.012	.010				.003							.375
No. 17	12	549	808,923	63	2,446	1,517	268	....	....	2,669	100	....	238	206	67	....	....	....	1,046	....	....	....	....	....	800,364	8,559
%					.304	.187	.033			.330	.012		.030	.025	.008				.129							1.058
No. 18	1	60	75,604	13	377	33	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	75,194	410
%					.498	.044																				.542
No. 19	220	7,709	15,059,723	1,724	12,546	11,292	31,543	7,625	6,475	9,866	1,896	....	2,031	2,754	6,617	....	2,929	....	895	....	678	....	285	393	14,961,958	97,765
%					.083	.075	.209	.051	.043	.066	.013		.013	.018	.044		.019		.006		.005		.001	.003		.649
No. 20	1	39	84,241	14	....	72	311	....	....	97	....	....	....	....	....	....	38	....	....	....	....	....	....	....	23,723	518
%						.085	.370			.115							.045									.615
No. 21	46	1,156	2,238,523	198	3,957	1,630	3,754	950	....	97	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2,228,135	10,388
%					.177	.073	.168	.042		.004																.464
No. 22	28	335	913,254	65	....	56	1,681	....	....	....	....	....	....	109	....	....	....	....	....	....	....	....	....	....	911,408	1,846
%						.006	.184							.012												.202
No. 23	3	120	127,062	12	94	....	9	....	....	46	....	....	43	....	....	....	....	82	....	....	....	....	....	....	126,788	274
%					.074		.007			.036			.034					.064								.215
No. 24	1	46	91,212	24	645	....	....	....	....	....	173	....	3,961	....	....	....	....	....	....	....	....	....	....	....	86,433	4,779
%					.707						.190		4.342													5.239
No. 25	58	2,076	3,565,920	490	3,764	17,117	3,361	2,901	....	1,833	....	....	935	562	....	14	....	....	....	....	....	....	....	....	3,535,333	30,587
%					.106	.486	.095	.082		.052			.026	.017		.001										.865
No. 26	27	848	1,861,219	139	244	2,082	2,214	580	645	1,013	159	....	....	....	914	....	1,288	....	....	....	....	....	....	....	1,852,080	9,139
%					.013	.112	.120	.031	.035	.055	.009				.048		.070									.493
No. 27	4	150	212,078	16	15	197	286	....	....	....	236	....	29	14	....	....	....	....	....	....	....	....	....	....	211,301	777
%					.007	.093	.135				.112		.014	.007												.368
No. 28	11	293	557,941	78	466	922	1,694	....	....	181	....	....	27	56	10	....	....	....	....	....	....	....	....	....	554,585	3,356
%					.084	.166	.305			.033			.003	.013	.001											.605
Total	2,252	96,919	182,573,052	14,150	149,923	118,644	205,920	101,658	22,099	84,065	23,691	...	28,179	21,251	51,602	1,727	11,828	7,118	10,381	4,933	727	23,139	225	8,372	181,697,570	875,482
%					.081	.065	.113	.056	.012	.046	.013		.014	.012	.028	.001	.007	.004	.006	.003	.0004	.013	.0001	.005		.4795

Damage In Transit

(Continued from page 50)

whom I have found, for one reason or another, were not actually passing the claims on to the railroads, but were absorbing the losses in their costs of doing business. I am sure they will correct this habit very shortly. I happen to be the chairman of a research committee of the PIA. One of the subjects we are working on is the car loading of paper. On my committee are representatives of ten large printers and magazine publishers. Only a few to date have made claims, but all intend to start in 1949. If even a few carry out their intentions, the $750,000 figure for 1947 wil be considerably higher in 1949 and 1950.

Starting From Source

After analyzing the figures which I have given you, I realized that something should be done and done quickly. I conceived the idea of starting from the source and watching each step that a roll of paper takes from the time it comes off the paper making machine to the time it goes on one of our presses. With the help of Mr. Angus, our director of purchases, and some of our larger customers, I visited over 20 paper mills. On one of these trips Mr. Hansen, our general traffic manager, and Mr. Fasold of the Chicago Claim Division of the A.A.R., accompanied me. On other trips I was accompanied by Mr. Hepburn, who is our paper conservator, and Mr. King, superintendent of our shipping and stock warehousing department. At each mill we kept track of the rolls as they came off the rewinding machines and were wrapped. Then we followed the rolls as they were loaded into the cars, blocked and banded, and the car door sealed. We kept complete records of every phase. As each one of these cars arrived at our plant in Chicago, a close check was made as to how the rolls had ridden in transit, how they were unloaded, what damage occurred in transit, and in what condition they arrived at the press. In order to get some worthwhile comparisons, we had the mills make us two different types of shipments.

(1) We allowed them to load the rolls in their standard method using whatever car they felt was satisfactory. (2) On other shipments, we handpicked the cars and had them load the cars in the way that we, as far as our experience is concerned, thought worked best.

In every case, damage was about the same as it always had been when the mills used any car available and loaded the rolls as they saw fit, whereas, on cars which we picked and had the mills load them the way that we ordered, the damage was reduced about 50 percent.

I feel that you gentlemen might be interested in our experiments. In order to clarify our suggestions, we have prints here tonight which should give you a visual picture of the suggestions as I read them.

Nine Suggestions

(1) Only commodity inspected cars should be used. Commodity inspected cars for paper stock are the same as commodity inspected cars for grain, and are in good repair, with smooth walls, ends, and floors, and with no holes to allow moisture to seep through.

(2) Cars must be thoroughly swept and cleaned before loading. All protruding nails, bolts, and splinters should be removed.

(3) The car should be lined with three-inch beveled wood stripping one-inch thick on sides, ends, and on the doorpost to keep the rolls from coming in contact with the sides and ends of the car. When rolls are loaded on end, stripping should conform in height with the bottom and top collar bands of the rolls. When rolls are loaded on side, the stripping should conform with the height of the core of each layer. Be sure no nails protrude from the wooden strips. (See drawing of diagram.)

(4) Use four metal wrapped bands one and one-quarter inch wide by .035 thick across each doorway to prevent any door jam caused by excessive side motion which sometimes occurs in transit. Be sure bands are placed on each side of wood strip so that rolls cannot have any contact with the anchor plates.

(5) Cover car floors with at least 3/32-inch chip board to prevent rolls from coming in direct contact with car floor when loaded on end. Rolls will usually make almost one complete revolution in transit whether loaded on side or on end. Wherever rolls are loaded on side at least three strips of one by six-inch boards should be placed lengthwise of the car on the car floor in order to keep the rolls from being damaged by the floor.

(6) Rolls of 43 inches in width and over should be loaded on end, one tier high. Under no condition should rolls be loaded on their side on top of rolls on end.

(7) Rolls under 43 inches in width should be loaded on side two high. When small rolls are loaded on end, one on top of another, a considerable damage will occur due to the fact that mills seldom wind their rolls even on cores and, as a result, one end will protrude and will dig into the roll above it.

(8) End-loaded cars should have a wooden block at the center of each end of the car extending 18 inches out from the end of the wall. This block should be at least 8 inches wide and at least two-thirds of the height of the rolls being loaded, coming in contact with the center roll of rolls. These blocks should be fixed to the end of the car so they will not move out of position. This will keep the rolls in a triangular pattern, thus eliminating wedging. When rolls are tightly wedged across the car, unloading is extremely difficult. Furthermore, end loaded cars should be loaded as solidly as possible; no banding or blocking should be used to take up space.

(9) When rolls are loaded on side, the center of the car at the door should be blocked with a small "H" frame that will stand all possible pressure of shifting. (See drawing.) Toe blocks should not be used as they will always cut into a roll.

Referring to suggestion No. 6 covering rolls loaded on end, a few of the mills we visited made statements to the effect that O.D.T. rulings would not permit them to follow our suggestions as a general practice, especially as to not loading rolls on side over rolls on end. We strongly urge the railroads to get this ruling changed, as the railroads will lose more revenue in damage claims than can be gained by the increased tonnage—at least this has been our experience in every car we have received loaded in such a manner.

Monthly Reports

Since January, 1948, we have had our cost department make up monthly spoilage and damage reports. I will not try to read our figures for the first nine months. They are percentagewise about the same as to the railroad and concealed damage. I have to admit that our plant damage isn't much better, but more about that later.

Referring to Item No. 1, where I stated cars should be watertight, we received a car last week where over 10,000 pounds of a 67,500-pound load was wet. Our claim was approximately $900.

Damage Whys and Wherefors

To check into the whys and wherefors of railroad damage, Mr. Hansen conceived the idea of breaking down the railroad damage to find out just what was causing the greatest trouble. This report only relates to cars received where damage occurred. Cars with no damage were omitted so the total poundage covering stock received on this report will not correspond with the total poundage used on our standard damage report.

Number of cars reported, 3,278; total number of rolls in cars, 138,357; total weight, 260,385,552 pounds; number of rolls damaged, 21,004; total number of pounds damaged, 1,448,052. *Cut a/c Shifting* 238,141 pounds, *No Apparent Cause* 226,209 pounds, Chafed 241,823 pounds, *Wet Stock* 298,066 pounds, *Jammed in Doorway* 31,806 pounds, *Cut on Nail* 132,299 pounds, *Cut on Bolt* 47,075 pounds, *Band Cut* 41,816 pounds, *Cut on Floor* 33,421 pounds, *Cut on Door Post* 75,182 pounds, *Cut on Bracing* 5,064 pounds, *Cut on Plate* 15,002 pounds, *Cut on Toe Block* 10,001 pounds, *Cut on Wall* 10,637 pounds, *Riding on Foreign Matter* 4,933 pounds, *Foreign Matter in Roll* 1,486 pounds,

Oil Soaked 23,139 pounds, *Puncture* 3,335 pounds, *Flat Core* 225 pounds, *Telescoped* 8,372 pounds.

Rough Handling

One of the factors I think that is causing considerable railroad damage is the rough handling, including humping, that cars loaded with paper are getting. After quite a few experiences in borrowing impact recorders from the railroads and having them spotted practically as soon as they were put in the cars, we finally purchased one of our own and found that the recorder could be wrapped so that there is no sound outside of the car. Whenever we used it we found that there are from five to eight lines into the fifth zone which proves that the cars were not being handled with kid gloves. I had an experience last year which more or less proves my point. I was in one of the large classification yards in Chicago watching a train being humped. Along came a car that was consigned to us from a paper mill. I asked my guide, who was an official of the yard, if they were going to hump that particular car, and he said "Why not?", and I said "You will smash the load all to pieces," and he replied, "Well, what of it, no one will know it," and I said, "The hell they won't, that car is consigned to us, and I'm going out to watch it." My guide acted very quickly and had the towerman stop the car at the first retarder, brought the train up and eased it down very gently, at the same time giving me a rather sheepish look, so I am pretty sure that this is a standard practice, and from the looks of some of the cars we get it apparently happens more than once.

Plant Handling

In my 1947 figures, as I said, I laid the cards on the table by admitting that the handling in our own plant was not too good; however, we are making great efforts to correct this, realizing that we probably will not get much cooperation from outside sources until we clean up our own skirts. We now have some men especially assigned to the task of seeing that rolls are handled with extreme care. We have designed and ordered over $100,000 worth of paper handling equipment. Unfortunately, the equipment manufacturers are still considerably behind on their orders, so our program will not be in full swing until about the first quarter of next year. There is one point that few people seem to realize, even printers themselves, and that is that one inch of paper on the outside of a 36 inch roll amounts to approximately ten percent of the total weight of the roll. With rolls running from $150 to $300 each, it is easy to see that a half-inch of damage to the outside of the roll is no small item.

I have a note here from Mr. Harold Hansen that I think I should read as it gives one of the best reasons why railroads should help to reduce railroad damage of paper.

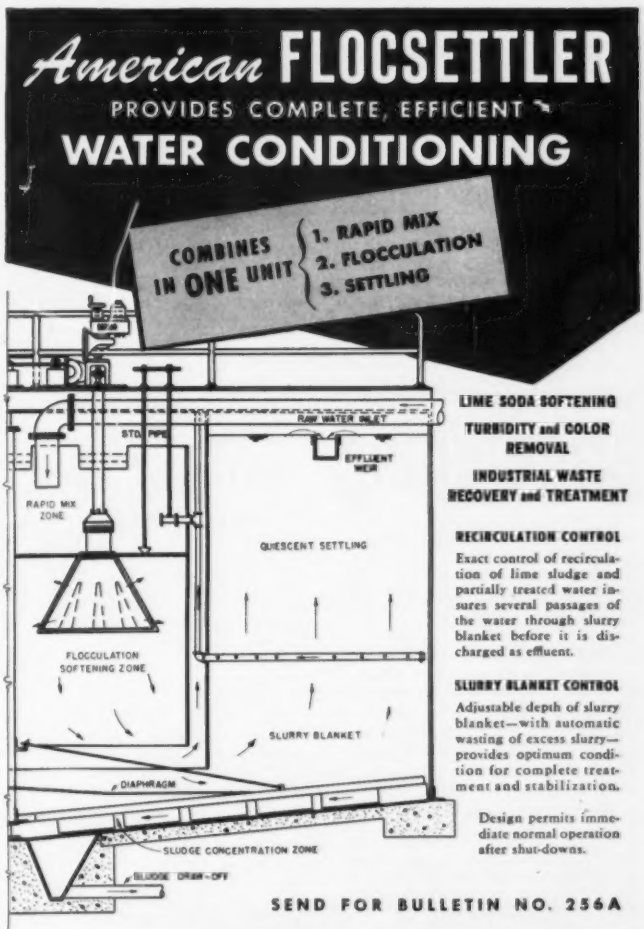
"I have just made a study of the average claim per car. Out of 295 cars of paper shipped to us from the various mills around the country, the total damage amounted to approximately $20.42 per car. In other words, this was the average claim filed per car. The average gross revenue to the railroads was approximately $190 per car. Therefore, the claim against the carrier was in excess of ten percent of the gross revenue received for hauling a carload of freight from the mill to our plant."

In summing up the problem, if the railroads would do four things I think a great deal of the railroad damage would be reduced. (1) Furnish the mills with cars in good condition; (2) See that these cars are clean, free of nails and bolts, etc.; (3) Study ways and means of better loading; and (4) More careful handling in transit—please no humping.

I am sure if you can accomplish these things, in the majority of cases, the railroads will make money instead of lose it.

Coosa Pines Office

COOSA PINES, Ala.—The Coosa River Newsprint Co. established its offices here on January 3.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STUB PIPE
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QUIESCENT SETTLING
FLOCCULATION SOFTENING ZONE
SLURRY BLANKET
DIAPHRAGM
SLUDGE CONCENTRATION ZONE
SLUDGE DRAW-OFF
LIME SODA SOFTENING
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RECIRCULATION CONTROL
Exact control of recirculation of lime sludge and partially treated water insures several passages of the water through slurry blanket before it is discharged as effluent.
SLURRY BLANKET CONTROL
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Lignin Problem Still Exists

National Research Council Told

OTTAWA—"I believe that the lignin problem from its theoretical as well as practical angle still very much exists," Dr. R. A. V. Raff, director of the research department of the Howard Smith Paper Mills, Ltd., told the Chemistry Section of the Science Ass'n., National Research Council here. "I also believe that these two angles of the same problem are closely connected and that a satisfactory solution to the question of how to make profitable use of our vast lignin resources will come through fundamental research rather than by the so-called 'Edisonian' method of approach."

"However that may be," Dr. Raff continued, "if and when a really profitable use for lignin has been established, the presently used chemical pulping methods may be entirely changed, possibly in the direction of a continuous extraction process with organic solvents. Today, pulp mills are only interested in obtaining pulps of certain properties and in good yields. In the future, they may also want to obtain optimal yields of lignins of a certain structure and uniformity and conforming to specified standards as well. These new and milder pulping methods may then, in turn, lead to better pulps in better yields, and to the simultaneous recovery of the other valuable constituents of wood now for the major part being burnt or going into the sewer, such as hemicelluloses, terpenes, rosins, fatty acids, waxes and tars."

Dr. Raff also stated that a process for the isolation of a low melting soda lignin particularly suitable in this respect has been installed by the Howard Smith Paper Mills, Ltd., in Cornwall, Ont., with construction under way to increase the daily lignin production to 25 tons.

"In this process, black liquor is carbonated with flue gas to a pH at which 40 percent to 60 percent of the lignin precipitates in the form of an acid salt which, upon heating the mixture to 90°C., melts and collects as a viscous tar," he explained. "In order to avoid oxidation, this carbonation is carried out very rapidly, using specially designed spray towers and a very high rate of liquor recirculation. The hot tar is separated by continuous decantation and dissolved in hot water. This solution of the so-called 'lignin acid salt' is then precipitated with sulphuric acid under controlled conditions, filtered and washed on a rotary filter and flash-dried."

"Most of this lignin is at present being used in laminating papers which are converted by heat and pressure to laminated plastics, manufactured in a plant recently erected by the Howard Smith Paper Mills, Ltd., in Ville La-Salle near Montreal and sold under the trade name of 'Arborite,'" Dr. Raff said, adding that the thermoplastic and fiber-binding properties of lignin are also made use of in the manufacture of various other kinds of boards, such as Masonite and Benalite (Masonite Corp.) and of Lignolite (Marathon).

"A great stir in the industry was caused two years ago when data were published by Keilen and Pollack on reinforcing properties of Indulin in GR-S," he declared.

"GR-S rubber, as is known, develops its strength properties only when compounded with carbon black," Dr. Raff pointed out. "Since carbon black was up to now the only filler which would do this, articles from GR-S had to be black to be strong. If lignin was to reinforce as well, strong articles of any color could be made from GR-S, since a small addition of titanium dioxide will make the dark lignin color largely disappear. Further, since the specific gravity of lignin is only 72 percent of that of EPC-black, a given weight of lignin would provide 1.4 times the volume loading of the same weight of carbon black. This seemed to be a very attractive proposition to the rubber manufacturer as well as to the pulp and paper trade."

"A cooperative project of the research and development divisions of the Polymer Corp., Ltd., Sarnia, and of the Howard Smith Paper Mills, Ltd., Cornwall, was subsequently established to study this question but it seemed impossible to verify the claims that either soda or kraft lignin had sufficient reinforcing properties in GR-S," he said.

"Only after we succeeded in modifying our lignins by giving them an oxidative treatment did we obtain the desired reinforcing," Dr. Raff indicated. "Plans to put this project into actual operation are well advanced and should guarantee a large outlet for kraft as well as soda lignins."

Realizing the existence of already a good number of natural lignins, differing from species to species as well as with the age of the plants in which they are formed, Dr. Raff pointed out, and that these lignins are further modified by the process of separation as well as that different processes of separation modify the lignins to a different extent and in a different way, the slow process in lignin research is understandable in spite of the abundant work which has been carried out.

Dr. Raff stated that the economical problem which faces the pulp industry since its very beginning is the question of the utilization of the vast amounts of lignin obtained in the commonly used pulping methods.

"In spite of the considerable amount of study on sulphite waste liquor, its complete economic utilization is far from being solved," Dr. Raff said.

India's Production Shrinks

OTTAWA—Paper production in India dropped from 24,000 tons to 23,000 tons in the period from July to September, 1948, according to a report in Foreign Trade of the Canadian Government by Richard Grew, Commercial Secretary for Canada in India, pointing out that this has come as a surprise, though government spokesmen at New Delhi had recently referred to the disquieting decrease in production in some lines. Transport difficulties and the labor situation are mentioned by Mr. Grew as some of the principal reasons for the low production figures.

No Time Lost

OTTAWA—The Department of Labor of the Canadian Government reports no time lost as a result of labor disputes during November, 1948, for the pulp and paper products industry, though this latest report shows 16,000 man-working days were lost in other industries during this period.

brightening

"Virginia" Zinc Hydrosulphite (ZnS_2O_4) is one of the most effective and economical brightening agents available to the pulp and paper industry. It is supplied expressly as a reducing, brightening, and decolorizing reagent for ground wood pulp, folding cover, and de-inked stock. "Virginia" is a prime producer of Zinc Hydrosulphite . . . the only producer of *high test*, 85-86 percent pure ZnS_2O_4. It is shipped in 250-pound, single trip steel drums.

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Send for descriptive literature on "Virginia" Zinc Hydrosulphite. Write Virginia Smelting Company, West Norfolk 3, Virginia.

VIRGINIA

Zinc Hydrosulphite

30 Years in Finland

SALT LAKE CITY—Citing Finland as an example, the *Deseret News*, under the headline of "Jingling Freedom in Our Pockets," says in part: "From the day of Finland's independence in 1917 until 1937 she was blessed with almost uninterrupted economic advancement. For the next ten years the curve changed direction; the economic uncertainty of war and its attendant evils had taken over." To illustrate the point, the article stated that the pulp industry in 1917 produced 95,000 tons. In 1939 this had grown to 1,475,000 tons, but in 1947 it had fallen to 700,000 tons. Concurrently, the paper industry produced 155,000 tons, 605,000 tons and 450,000 in the same years.

Floods Hit East

NEW YORK—Floods, occasioned by rising temperatures that caused rapid melting of snow and aggravated by heavy rains, were reported on December 31 on the following rivers:

Connecticut—The Naugatuck and Connecticut Rivers, and the Mad and Still Rivers, tributaries of the Farmington River; *Massachusetts* — The Hoosac River; *New Jersey*—The Millstone and Raritan Rivers; *New York*—The Hudson River, Kinderhook Creek; and *Vermont*—The Battenkill River and Roaring Branch.

Mills listed in *Lockwood's Directory of the Paper & Allied Trades* in towns reported to have been in the path of the floods included the following:

Connecticut: None; *Massachusetts:* Brightwater Paper Co., and L. L. Brown Co., Adams; Mountain Mill Corp., and Smith Paper, Inc., Lee; *New Jersey:* Johns-Manville Corp., Manville; Homesote Co., Trenton; *New York:* A. P. W. Products Co., Albany; Albia Box & Paper Co., and John A. Manning Paper Co., Inc., Troy; *Vermont:* None.

The International Paper Co. is reported to have closed its mill at Palmer, Saratoga County, N. Y., at 3 p. m. on December 30 because of high water, ice and debris spilling into its Hudson River dam and the West Virginia Pulp & Paper Co. at Mechanicville, N. Y., reported 100 inches of water rushing across its dam, compared with the record of 144 inches during the 1913 flood.

Council Taken to Task

CLAREMONT, N. H.—New support for paper manufacturers in their fight for increased power facilities in New England came here December 21, when a National Rural Electrification official declared there is, in New England, "ample opportunity for more and cheaper power."

William J. Neal of Washington, D. C., deputy administrator of the National Rural Electrification Administration, took the New England Council to task for its published report that "New England is getting along nicely with its present and planned power facilities."

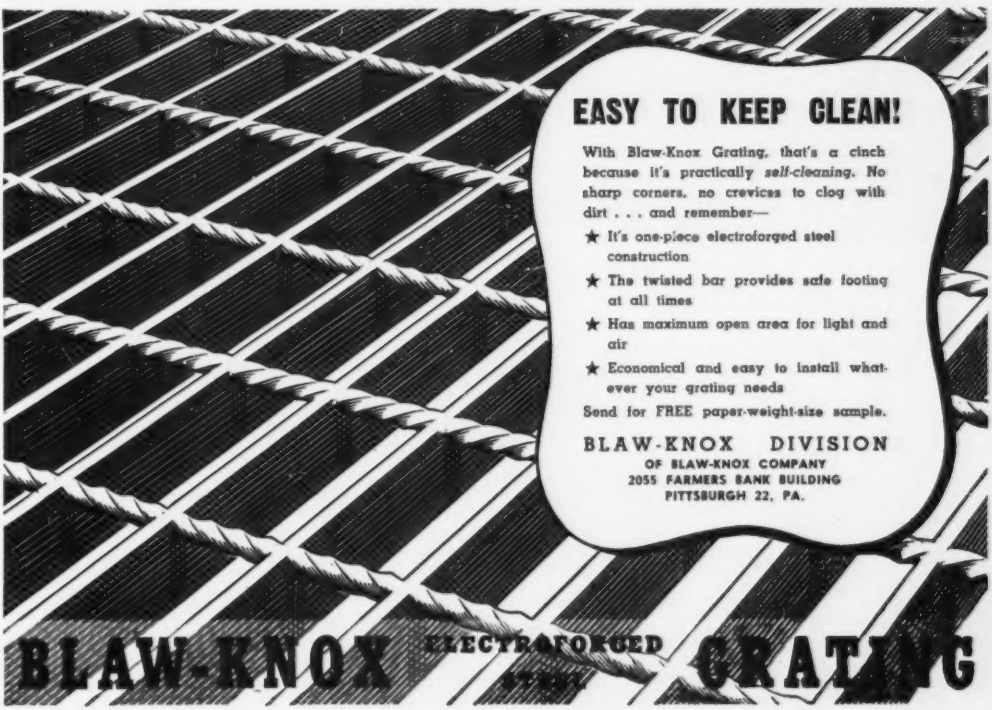
Neal declared that the proposed St. Lawrence waterways project has high potentials, and said that while industries of the area "find themselves in the midst of abundant hydro-electric power potential, they are being charged the highest rates in the country."

The government executive said the New England Council report "concludes, or seeks to create the impression, that there are only 420,000 kilowatts of undeveloped waterpower in New England and it is impossible for industry of the area to receive any benefit from the St. Lawrence seaway and power project."

Neal said a study of the 1947 report of the Federal Power Commission would show that the New England Council "has sold New England short." Neal said "the report shows there are 80,000,000 kilowatts of generating capacity available at sites which are considered to be capable of economic development at such times as power market conditions warrant in the United States as a whole."

DeVoe Gair V.P.

NEW YORK—Raymond F. DeVoe has been elected a vice-president of the Robert Gair Co.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Rail Rate Hearings

(Continued from page 7)

be presented as to why the lower ratings should apply on the mill's products.

These hearings are to be held, commencing at 10:00 A.M., in the following cities:

Jan. 10-14—Great Hall, Chamber of Commerce, 65 Liberty St., New York City.

Jan. 17-21 — Room 220, Chicago Union Station, Chicago.

Jan. 25—Room 916, 101 Marietta St., Atlanta, Ga.

Jan. 31—Baker Hotel, Dallas.

Feb. 3—Room 330, State Office Building, Sherman and E. Colfax Sts., Denver.

Feb. 8—Olympic Hotel, Seattle.

Feb. 14—Pacific Freight Tariff Bureau, 717 Market St., San Francisco.

Requests for assignments of time on specific items will not be given. This means that shippers must attend the meetings in the city or cities nearest their mills and present their material when the opportunity permits them time to be heard.

Different groups of items are allotted certain days in the New York and Chicago meetings. It is best to observe the days specified as listed in the following information:

Classification Item 17885 is set for hearing in New York on January 11 and in Chicago on January 18, all other cities as previously listed.

Items 24600-24745 are scheduled in New York on January 14 and in Chicago on January 21.

The following classification items concern the paper industry, and while these are but a few, they should influence some move to protect transportation costs:

CFC Item 17885, Carpet Lining Paper. Present rating lcl, Class R26 (55 per cent in East). Class 4 (55 per cent in South and West). Proposed ratings 65 per cent, also cl min. wgt. increased from 30,000 to 36,000 pounds.

CFC Item 24600 and 24605 Insulating Material: Asbestos, felt paper, corrugated asbestos felt or paper. Present ratings for solid flat sheets, lcl, Class 3 (70 per cent). Proposed increase to 85 per cent. Present ratings on carload now Class 5 (35 percent) in the East to be increased 2½ per cent or to 37½ per cent. In forms or shapes other than flat sheets, present lcl rating now Class 2 (85 per cent), proposed to increase to 100 per cent.

CFC Item 24692 Groundd Waste Paper, present carload rating is 37½ per cent and proposed to increase to 45 per cent.

CFC Item 24697 Corrugated or Fibreboard Paper for Insulation Forms. Present rating, lcl, Class 1½ (150 per cent), proposed increase to 200 per cent.

CFC Item 24708. Insulating Paper Consisting of Two or More Sheets Held Together by a Waterproofing Compound Reinforced Between Sheets with Strands of Fibre and Braced or Faced with Aluminum Pigment Coated Paper in Wrapped Rolls. Present lcl rating Class 3 (70 per cent) and proposed to be increased to 85 percent.

CFC Item 24745 Vegetable Fibre Felt Paper. Lcl present rating Class 1½ (150 per cent) and proposed to increase to 300 per cent.

There are many other items used by the paper industry, such as, chemicals, etc., and on these the ratings also are proposed to be increased.

Bemis Multiwall School

WILMINGTON, Calif. — Sales representatives of the eight western plants and sales offices of Bemis Bros. Bag Co. attended a multiwall paper shipping sack school during the week of January 10 at the company's local plant. The five-day course included coverage of manufacturing processes, performance, new developments, markets and company multiwall sales.

G. A. Bauman, plant manager, and his staff conducted the school assisted by C. W. Akin, supervisor of multiwall sales at the Bemis general offices in St. Louis. Similar schools are planned for eastern territories.

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In-Plant Gambling

NEW YORK—In-plant gambling is costing many employers thousands of dollars in production losses, year in and year out, the Labor Relations Institute asserts.

Institute field workers discovered in a recent study that many employers close their eyes, or are reluctant to admit there is much gambling going on in their plants or offices. Others declare in good faith that they know of no such thing.

The L.R.I. study includes an easy-to-calculate formula designed to determine how much in-plant gambling costs an employer in dollars and cents.

Here are some of the reasons why management has a direct interest in eliminating gambling in plants and offices, according to the Labor Relations Institute: (1) It takes place on company time; (2) It lowers quality and quantity of production. Disgruntled losers cannot concentrate on their work! (3) Gambling makes for poor labor relations (the gambler is hard to get along with); (4) Gambling paves the way for higher wage demands in collective bargaining. The more money a gambler loses, the more he needs to recoup his losses; (5) The gambler often blames his employer for the meager pay he takes home to his wife. He claims he is underpaid, when actually he squanders part of his earnings on the ponies or other forms of gambling.

AMERICAN PAPER AND PULP ASSOCIATION'S PRODUCTION RATIO REPORT*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1948		Corresponding Weeks—1947	
November 20	99.4	November 22	111.9
November 27	93.0	November 29	107.4
December 4	95.4	December 6	112.1
December 11	98.2	December 13	110.1
December 18 (Revised)	95.9	December 20	107.2
December 25	**74.6	December 27	74.9

COMPARATIVE MONTHLY SUMMARIES

1947						1948	
Jan.	102.1	May	106.2	Oct.	109.5		
Feb.	105.9	June	106.2	Nov.	109.3	Jan.	100.3
Mar.	106.1	July	95.5	Dec.	101.5	Feb.	99.8
Apr.	105.1	Aug.	104.2			Mar.	100.8
		Sept.	102.0	Year Avg.	104.3	Apr.	100.8
						May	100.5
						June	95.7
						July	‡85.3
						Aug.	‡96.8
						Sept.	‡91.8
						Oct.	‡99.1
						Nov.	‡97.3

‡ Preliminary Ratios.

COMPARATIVE YEARLY SUMMARIES

	1941	1942	1943	1944	1945	1946	1947	1948
Year to Date	97.1	90.4	87.8	88.1	89.7	101.4	104.9	96.7
Year Average	97.4	90.4	87.8	88.1	89.4	101.1	104.3	

** Indicates 1948 volume of 134,773 tons—Comparable week 1947—118,704 tons.

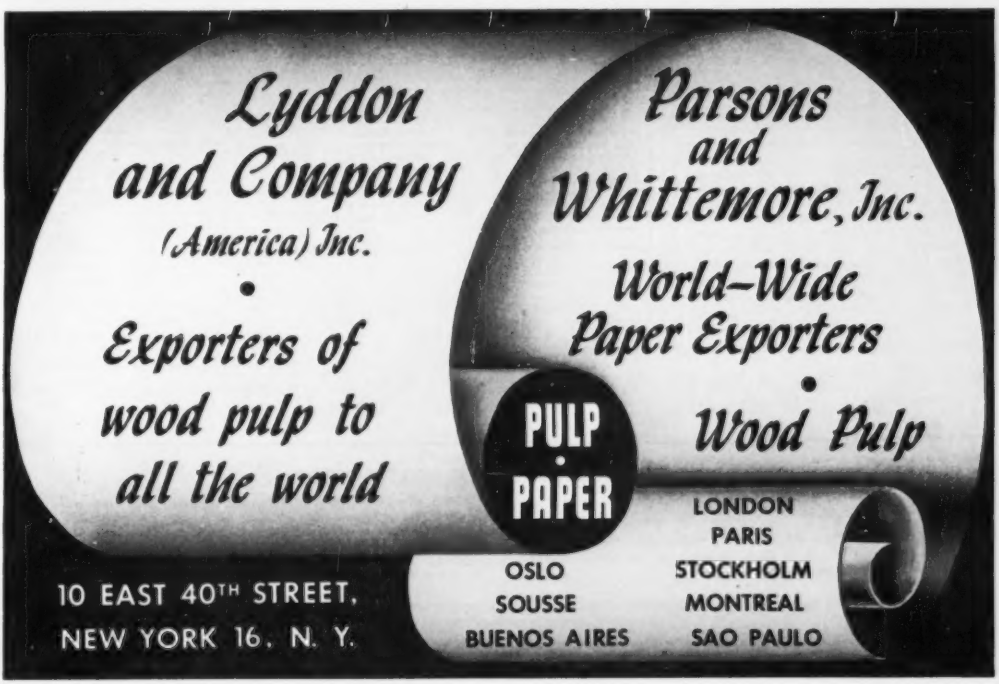
PAPERBOARD OPERATING RATIOS†

Current Weeks—1948		Corresponding Weeks—1947	
November 20	97	November 22	102
November 27	89	November 29	100
December 4	93	December 6	98
December 11	96	December 13	100
December 18	96	December 20	100
December 25	87	December 27	77

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1947	99	103	101	100	101	101	90	99	96	101	99	89	98
1948	99	100	102	102	100	94	81	92	91	96	94		

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.



CLEARING HOUSE

HELP WANTED

MEN WANTED
Positions Open

Superintendents for paper mills in the United States and in Canada, (several); technical paper specialist with chemical education and practical paper mill experience for special work; supervisor for research laboratory devoted to development of paper products; superintendent asbestos cement machine plant; assistant superintendent felt mill.

Chemists, chemical engineers, one with Ph.D. (degree) and laboratory men; master mechanics; plant engineers; mechanical and electrical engineers; designers and draftsmen.

Finishing foreman for Canadian paper mill; boss machine tenders, also machine tenders and back tenders; one machine tender for South America; salesman with technical education to sell chemicals and specialties to the paper mills.

We invite correspondence (confidential) with mills seeking executives and with executives seeking new positions.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston, Mass.
J-6

Side line salesmen wanted by specialty bag manufacturer of glassine, cellophane, dry wax and candy bags. Complete line of packaged resale items will also be offered to those who qualify. Must have large following with paper and grocery jobbers plus large industrial trade: State experience and present lines now representing. Commission. Box 49-7, care Paper Trade Journal. J-6

WANTED: Comptroller Northern pulp and paper mill requires services of experienced comptroller to direct and supervise all phases of cost and general accounting in an integrated mill. Should have ten years of proven accounting experience and demonstrated ability to supervise work of others. Salary open. Write age, education, experience, general and personal qualifications, and salary expected to Box 49-13, Paper Trade Journal. J-13

SALESMAN WANTED—To sell Kraft bags and butcher paper to super market and chain stores. Address Box 49-8 care Paper Trade Journal. J-6

HELP WANTED

Thoroughly experienced converting man on facial tissue. N.Y.C. vicinity. Toilet, napkins, boxed goods, most modern equipment. Must be able to maintain machinery in highly productive condition and train employees to operate efficiently. A most excellent opportunity for a man who knows his business and wants to work at it with an eye to the future. Non-union shop. Give your complete history with reply. A thoroughly competent, energetic producer need not worry about his compensation. Box 48-818, car Paper Trade Journal. J-6

SALARIED POSITIONS $3,500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (39 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
117 Dun Bldg., Buffalo 2, N. Y.
TF

TOUR BOSS

Thoroughly familiar with folding grades and test liner. For one machine mill in Northern New Jersey. Excellent salary and good working conditions. Address Box 48-759, care Paper Trade Journal. TF

HELP WANTED—Key personnel for new multi-wall bag plant soon to start operations in Monroe, Louisiana. Excellent opportunity for production manager and foreman, sales manager and assistant, pressmen, machine adjusters and loaders. All information and correspondence will be treated with strictest confidence. Give experience and starting salary expected. Nesjoy Bag and Paper Co., Alamo National Building, San Antonio, Texas. J-6

ASSISTANT to GENERAL SUPERINTENDENT — Four machine tissue mill, Fox River Valley, Wisconsin. Machine experience required. Address Box 48-813 care Paper Trade Journal. J-13

OPPORTUNITY available for experienced Paper Chemist familiar with chemical specialties for the paper industry and interested in sales development work. Location: Middle Atlantic Area. Address Box 49-10 care Paper Trade Journal. J-6

SITUATIONS WANTED

PLANT MANAGER—Thorough experience in converting paper and boards; wants change to position offering better opportunity. Excellent production and labor relations background. Address Box 49-15 care Paper Trade Journal. J-27

ASSISTANT MASTER MECHANIC, experienced in Kraft, bleach, pulp and board mills. Best references. Address Box 48-718 care Paper Trade Journal. J-6

TECHNICAL DIRECTOR—Age 36—14 years experience Paper—Board Mills and Converting, Production, Technical Control, Cost, Development. Available for position as Technical or Production Manager. Now employed. Box 48-807 care Paper Trade Journal. J-20

MILL SUPERINTENDENT—Thorough experience in specialties and tissue grades. Good knowledge of pulp preparation. Excellent production and labor relations background. References. Address Box 48-805 care Paper Trade Journal. J-20

COMPTROLLER specializing in costs and systems invites confidential correspondence regarding change of position. Experience all types of paper and bag manufacturing. Minimum salary $7500.00. Address Box 48-808 care Paper Trade Journal. J-13

SUPERINTENDENT available at once. Thoroughly experienced on all grades of cylinder made folding box and test liner, also Fourdrinier Kraft board and specialties. Capable of producing quality and production at minimum cost. Address Box 48-815 care Paper Trade Journal. J-13

CHEMIST — B.S. Extensive experience in manufacture of coated and fancy papers, as Chief Chemist, Superintendent of Coating, Finishing and Printing Operations. Desires position in this or allied field with progressive company. Address Box 48-823 care Paper Trade Journal. J-6

MILL MANAGER—GENERAL SUPERINTENDENT—Well rounded experience in executive, technical and operating capacities—pulp and paper industry—M.I.T. graduate—Chemical Engineer. Available immediately. Anywhere in U.S.A. Address Box 49-16 care Paper Trade Journal. J-13

EXECUTIVE with over twenty years experience in all phases of specialty bags and envelopes, cellophane, glassine, combination, as well as non-transparent papers. Administration—production—promotion—sales management. Address Box 49-6 care Paper Trade Journal. J-13

LAMINATING — Experienced man several years in charge of modern laminating plant laminating greaseproof glassine checkbook covers and other specialties, is seeking new connection. Can get results. Address Box 49-14 care Paper Trade Journal. J-20

FOR SALE

FOR SALE—114" Kidder Slitter and Rewinder in good condition. Address Box 49-9 care Paper Trade Journal. J-6

RATES FOR CLASSIFIED ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $2.50. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $2.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $2.50.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional.

Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 19, N. Y.

Serving Three Hydrapulpers

Double-Fisted Operation

Something to behold are the three big conveyors shown above and the ease with which they charge the three big Hydrapulpers on the upper level.

Conveyor length, 85 ft.; Head, 22 ft.

Hydrapulpers:

1—20-foot continuous unit (C.I.) on dirty mixed papers for filler.

1—14-foot batch or continuous unit on sub-liner and bottom liner or filler stock as required.

1—16-foot batch unit on top liner.

Here is a mill that is geared to take full advantage of its Hydrapulping capacity, thanks to its conveyor system. Here is a mill that stands as an object lesson to mills with high Hydrapulping capacity but unable to deliver the stock fast enough for full-blast, double-fisted pulping operation.

To such mills Shartle or Dilts might, perhaps, make some timely suggestions on conveyor equipment.

Shartle Bros. Machine Co.
MIDDLETOWN, OHIO

Dilts Machine Works
FULTON, NEW YORK

Shartle Dilts

DIVISIONS OF THE BLACK-CLAWSON COMPANY, HAMILTON, OHIO
Western Sales Office: R. T. Petrie, Mayer Bldg., Portland, Oregon
Associate: ALEXANDER FLECK LIMITED, OTTAWA, CANADA

FOR SALE

POWER REAM CUTTERS

New 44" National Automatic Clamp Power Cutters, with A.C. motors — carried in stock, ready immediate shipment.

Also specializing in the New 36" National Hydraulic. Send for full details on this new smooth-running machine.

THOMAS W. HALL COMPANY, INC.
Stamford, Conn.
(N. Y. Sales Office: 120 West 42nd St.)

Also rebuilt Sheeters, Slitters, and Rewinders.

FOR SALE

2—36" Friction Calenders
1—30" Friction Calenders
1—42" Super Calenders
10—45" Face Engraved Embossing Rolls, Very desirable patterns.
1—74" Waldron Double Coater (Wet end only)
1—84" Waldron Double Coater (Wet end only)
1—52" Brush Finishing Machine

Will accept any reasonable offer, address inquiry to Box No. 49-4, care Paper Trade Journal. J-20

FOR SALE

In the East—Paper Mill with 66" wide Fourdrinier Paper Machine. Production 15 tons per 24 hours. Water Power and Electricity. Plant in excellent condition. For further particulars, address Box 49-1, care Paper Trade Journal. J-5

FOR SALE

Nordberg 1250 HP diesel electric generating units (2), 5-EG; G.E.-Westinghouse 1000 KVA, 2300 v., 3 ph., 60 cycle, 180 rpm, heavy duty, air injection, excellent condition, factory warranted, prompt Midwest shipment.

H. Y. SMITH CO.
828 N. Broadway Milwaukee 2, Wis.
J-6

FOR SALE

BARKERS
1—5' Carthage Disc Barker

BEATERS
3—1000 lb. Dilts Beaters—Iron Tub.
1—800 lb. Beater—iron tub.

BRASS FELT ROLLS
9—4" diameter x 140" face (with bearings).

BREAST ROLLS
1—100" x 14".
8—114" x 14".
1—120" x 14"

CALENDER STACK
1—72" 5 roll Calendar Stack.

CRUSHERS
1—18" x 18" Jeffrey Single Roll Crusher

CYLINDER MOULDS
1—36" diameter x 80" face.
1—30" diameter x 72" face.
1—36" diameter x 79" face.
1—42" diameter x 88" face.

DECKER
1—Decker—48" diameter x 84" cylinder mold (New).

DRIVES
2—#4 Reeves Drives.
1—#2 Reeves Drive.
1—Cleveland Worm Drive. Ratio 10 to 1.
1—Smith & Winchester mortise gear Drive.
1—D. O. James 75 H.P. Speed Reducer with couplings and motor base. Ratio 2:16 to 1. 900 RPM.
1—Foote—7½ h.p. Speed Reducer (Ratio 240 to 1)
2—Smith & Winchester Mortise Gear Drives with 26" diameter clutches—Ratio 8 to 1.

DRIVES (Angle)
1—General Machine Company 16 : 1.
1—Philadelphia 58:1 — 1 h.p. — 1200 r.p.m.
2—Philadelphia 21½:1 — 3 h.p. — 1200 r.p.m.

V-BELT DRIVE
1—81¾" diameter x 7⅛" face, 5 groove.
1—16½" diameter x 7⅛" face, 5 groove. (With clutch).

DRYERS
9—36" diameter x 76" face.
1—48" diameter x 60" face with bearings.
4—48" diameter x 91" face.
1—48" diameter x 94" face.
8—25' x 120" (Baby Dryers)
2—36" x 143".
1—24" x 130".

DRYER SECTION, etc.
5—Dryers, 36" diameter x 75" face.
1—Baby Dryer.
Including frames, bearings, steam joints, gears, felt rolls, press rolls with stands and bearings.

FLAT SCREENS
2—12 Plate Murray Dunbar Flat Screens.
1—8 plate Packer Type Flat Screen.
1—6 plate Shartle Flat Screen.

FORK TRUCK
1—Lewis Shepard Fork Truck (Height of lift 109", capacity 3000 lbs.)

HYDRAULIC PRESS
1—Watson-Stillman Co. (Platen 24" x 24").

JORDANS
1—Noble & Wood, Pony Monarch, Belt Driven.
2—Noble and Wood—Mammoth Type.

MISCELLANEOUS
1—Caustic Mixer.

MOTORS
2—5 h.p. ball bearing—splash proof motors —3/60/440. 1160 r.p.m.
1—¼ h.p. ball bearing—splash proof gearhead motor—3/60/440. 1725 r.p.m.
1—2 h.p. ball bearing—splash proof gearhead motor—3/60/440. 1725 r.p.m.

PRESS ROLLS
Various sizes.

PULLEYS
Various cone and assorted pulleys.

PULP STACKER
1—Link Belt Company Pulp Stacker, 30 ft. conveyor, 2½ ft. wide, self propelled, with motors.

PULPER
1—Jones Pulper. Complete with motor and drive.

PUMPS
2—Weil Pump Co.—100 g.p.m.—100 P.S.I. including 15 h.p. motors (new equipment).
1—Bell & Gossett—300 g.p.m.—120' head—including 15 h.p. motor.
1—Goulds Sump Pump—50 g.p.m.—20' head —including motor.
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.

REEL
1—72" Beloit Reel.

ROLLS
500—Brass tube-steel tube—rubber covered iron rolls—various sizes.

SAVEALL
1—#5 Bird Saveall.

SCREEN PLATES
20 Plates cut .016.
10 Plates cut .008.
Also other sizes and cuts in stock.

SHEETER
1—136" Moore & White Sheeter, duplex, with layboy.

SLITTERS AND WINDERS
1—72" Cameron—Type 10-10A.
1—62" Cameron—Type 10-10-AJ.
1—42" Cameron—Type 28-8-7 (shear cut).
1—72" Cameron—Type 28-8-7-D (shear cut).
1—42" Cameron—Type 40-4-B.
1—42" Cameron—Type 24-2A.
1—50" Cameron—Type 24-2L.
1—42" Cameron—Type 9-S.
1—56" Cameron—Type 24-2A.
1—30" Langston.
1—42" Cameron Constant Tension, with pneumatic control.

SQUEEZE ROLLS
2—Rubber Squeeze Rolls, 20¾" diameter x 102" face.

STOCK PUMPS
1—10 x 20 Shartle Duplex.
4—7 x 16 Shartle Duplex.
Numerous other Centrifugal Stock Pumps. Advise as to your requirements.

SUCTION COUCH ROLLS
1—Sandusky 14⅞" diameter x 103" drilled face.

SUCTION PRESS ROLLS
1—Downingtown Suction Press Roll 16" diameter x 66" drilled face.

TRIMMER
1—56" Smith & Winchester—Undercut.

TURBINE
1—150 h.p. Westinghouse Type C-Gear Turbine (Recently rebuilt).

VACUUM PUMPS
1—Sandusky 8 x 10.

WAXING MACHINE
1—62" Mayer Waxing Machine.

YANKEE DRYERS
2—8' diameter x 172" face.

We are always in the market to purchase your surplus or idle machinery. What have you to offer? Wanted Cylinder and Fourdrinier Machines (complete mills).

Paddy Ross, Pres. **J. J. ROSS COMPANY** **Sam Kurs, Treas.**

250 Frelinghuysen Ave. **Tel.—Bigelow 3-3720** **Newark 5, N. J.**

TELEPHONE
HUMBOLDT 2-2177

CABLE ADDRESS: JACKROSS

ROSS PAPER MACHINERY CO.

265 PASSAIC STREET
NEWARK 4, N. J.

CONVERTING
PAPER MAKING EQUIPMENT

NEW, USED, REBUILT
PAPER AND PULP MACHINERY

1—Pusey & Jones 120" Fourdrinier Paper Machine, complete with enclosed drives, ball bearing wet end with suction press and suction couch, 60" diameter dryers, 3 calender stacks and winders.
1—Moore & White 82" Fourdrinier Machine Complete.

BEATERS
9—750 lb. Marpe Iron Tub, Roll 60"x40"
2—Valley Iron 750 lb. Iron Tub—Bronze filled.
1—Valley Iron 2000 lb. Ne tub.
1—Downingtown 2000 lb. Beater Roll—48" x 80" —with perforated back fall, iron tub.
1—E.D. Jones 2000 lb. Beater Roll—47" x 90", iron tub and bottom.

BLOWERS
1—American Sirocco Size 4.
2—American Blowers Z108.
1—American Blower Z706.
1—American Blower Z758.
3—Buffalo Forge Co. #24 Cast Iron Blowers

CALENDER ROLLS
6—116" face x 9½" diameter.
4—104" face x 9¼" diameter.
3—104" face x 12½" diameter
32 Rolls—various sizes.

CALENDER STACKS
1—104" face 5 roll stack, with drive.
1—76" face 7 roll with drive.
1—76" face 3 roll with drive.
1—112" face 7 roll.

CONVEYOR
1—18½ ft long x 30" wide—with motor.

COUCH ROLLS—BRASS
1—104" face x 18" dia.
1—138" face x 18" dia.
1—156" face x 18" dia.
1—92" face x 19½" diameter.
2—94" face x 21½" diameter.

COUCH ROLLS—RUBBER
1—110" face x 29" dia.—New.
1—120" face x 40" dia.
1—141" face x 21" dia.

CYLINDER MOLDS
9—IMPCO 49" diameter x 84" face.
2—36" diameter x 132" face Cylinder molds with vats, couches—ball bearing.
2—74" face x 36" diameter.
1—134" face x 36" diameter, with stainless steel shafts.
1—78" face x 36" diameter.

CYLINDERS AND VATS
2—136" face x 36" dia.—with vats, couch, complete.

DRIVES
1—6C. Reeves Drive.
1—New Reeves 4343—C-18 with 2 h.p. 220-440 volt G.E. Motor.

DRYERS
4—74" face x 28" diameter with gears.
6—143" face x 48" diameter.
1—124" face x 60" diameter.
6—86" face x 36" diameter.
1—77" face x 48" diameter—with gear.
1—84" face x 340" diameter.
18—78" face x 36" diameter, complete with 2 deck frames, gears, bearings and steam joints. Drives, line shaft and felt rolls are available.
1—78" face x 18" diameter with gears and bearings.
2—46" face x 24" diameter—chromium plated.
1—120" face x 16" diameter—Baby Dryer.
34—128" face x 48" diameter.

EMBOSSER
1—Waldron 40"—ball bearing—complete.

EXTRACTOR ROLLS
1—Downingtown—84" face x 17" diameter.

FLAT SCREENS
3—10 plate Sandy Hill.
1—Sandy Hill 8 plate—with scraper.
1—New Sandy Hill 12 plate, with scrapers and V-belt drive.
1—Montague 6 plate—ball bearing.

FOURDRINIER SECTIONS
1—P & J 156" x 80 ft. ball bearing. Complete from inlet to 22" diameter suction couch. Brass and Rubber covered table rolls. 6 Brass Suction Boxes operated at 1000' per minute.
1—M & W 82" x 49' complete with 3 suction boxes, shake, 3 suction presses and size press.

HAMMERMILLS
1—Americas Hammermill—37" anti friction bearing equipped.

HEAD BOXES
1—118" Bronze Lead Lined, Deckt.

INLETS
1—Voith inlet for 151" wire with 22" slice. Complete, including drive.

JORDANS
1—Jones Standard—ball bearing direct connected to 150 h.p. G.E. 440 volt motor.
1—#3 Miami, for motor drive.
1—Jones Standard for V-Belt Drive.
1—Jones Majestic, roller bearing—stainless steel filling—for motor drive.
4—Jones Majestics with base and couplings—bronze filled, 2 sets of new bronze fillings.
2—#3 Appleton with base and couplings—bronze filled.
1—Dillon Horse #3—direct connected 75 h.p. Stainless steel ½" filling.
1—#4 Smith & Winchester—Ball bearing.

LABORATORY EQUIPMENT
1—12" 6 roll calender stack with Westinghouse 7½ h.p. motor.
1—New E. D. Jones 172 iron tub beaters, stainless steel fillings.

MOTORS
1—Fairbanks Morse — 30 h.p. — 400 r.p.m. — 220-440/550.
1—Reliance 25 h.p. ball bearing, 550 v., 3 phase, 60 cycle—1750 r.p.m.
1—Reliance 25 h. p. ball bearing, 440 v., 3 phase, 60 cyc., 1750 r.p.m.
1—General Electric 150 h.p.—440 v.—3 phase—60 cycle—600 r.p.m.

PRESS ROLLS
1—110" face x 13" diameter—rubber.
1—191" face x 18½" diameter—rubber.
1—123½" face x 17½" diameter—rubber.
1—112" face x 18" diameter—rubber.
1—122" face x 17½" diameter—brass.
1—117" face x 24" dia.—Brass.
1—84" face x 20" dia.—Rubber.
1—118" face x 22" dia.—Rubber.
2—118" face x 21" dia.—Rubber.
1—147" face x 11¾" dia.—Rubber.
1—74" face x 10" diameter—Rubber.
1—100" face x 17" diameter—Rubber.
1—136" face x 22" diameter—Brass.
1—102" face x 10" diameter—Rubber.
1—119" face x 17" diameter—Brass.
1—76" face x 10" diameter—Brass.
1—53" face x 14" diameter—Brass.
1—53" face x 12" diameter—Iron.
1—53" face x 10" diameter—Iron.
1—74" face x 10" diameter—Iron.
1—73" face x 14" diameter—Iron.
1—102" face x 18" diameter—Brass.

PULP EQUIPMENT
1—Jigger—1 deck—vibrating screen.
1—Mitts & Merrill 217 Pulpwood chipper.
1—5' Carthage Disc Barker.
1—#89" Carthage Ball Bearing Chipper—4 knife.
2—New Stedman Disintegrators—50".

PULPERS
1—Bird Pulper
2—#2 Lamaye Pulpers.

PUMPS
1—Worthington Monoblock—250 g.p.m.—130' head —direct connected to 15 h.p.—3500 r.p.m.—220/440 volts, totally enclosed, ball bearing motor.
1—Ingersoll Rand—50 g.p.m.—210' head—direct connected 7½ h.p.—220-440 volt—3 phase—60 cycle totally enclosed motor.
1—New Warren—all bronze, 30 g.p.m.—90' head —connected to 1¼ h.p.—440 volt motor.
1—Ingersoll Rand 150 g.p.m.—250' head—connected to 5 h.p. motor—220/440 volt motor.
1—Worthington—2000 g.p.m.—250' head.
1—Worthington 3 x 4—300 g.p.m. 75' head—1750 r.p.m. Ball bearing for motor drive.
1—Troesch Marine ball bearing, 800 g.p.m.—800' head.
3—6" x 8" B & C Open Impeller Bronze Pumps —belt drives.

PUMPS—OPEN IMPELLER
1—Morris open impeller—8" suction—8" discharge —belt drives.
1—Morris Vertical Open Impeller 6 x 6—300 g.p.m. 3 percent stock—60' head—connected to G.E. 15 h. p. 220-440 volt 3 phase—40 cycle—1183 r.p.m.

5—New Goulds—ball bearing—8" suction—4" discharge—700 g.p.m.—60' head. Requires 20 h.p. at 1750 r.p.m.
6—New Goulds—ball bearing—8" suction—6" discharge—1500 g.p.m.—45' head. Requires 25 h.p. at 1150 r.p.m.
5—New Goulds—ball bearing—6" suction—4" discharge—600g.p.m.—50' head. Requires 15 h.p. at 1750 r.p.m.
3—New Goulds—ball bearing—8" suction—6" discharge—1200 g.p.m.—60' head. Requires 30 h.p. at 1150 r.p.m.
5—New Goulds—ball bearing—8" suction—6" discharge—1000 g.p.m. 40' head. Requires 20 h.p. at 1150 r.p.m.

REELS
2—Beloit 110" two bowl Reel.
1—Pusey & Jones 76"—2 bowl reel.
1—M & W 76" 2 bowl reel.

ROTARY KNIFE CUTTERS
5—Sprout Waldron Cutters Type F-11. 30" knives—used 30 days.

ROLLS
75—Steel—100" face x 9" diameter.
250 Assorted felt carrying.
50—Brass Chromium Plated. Ball Bearing, 60" Base x 17" Diameter
11—Brass 126" face x 11" diameter.
1—Brass 140" face x 12" diameter.
1—Brass 130" face x 12" diameter.
1—Brass 129" face x 15" diameter—ball bearings.

ROTARY SCREENS
3—Jones Lathrath—cylinder 84" face x 38" diameter.
9—2A Bird—Copper Vats.
1—#3A Bird Rotary—copper vats—with motors —used less than 1 year.

SCREW PRESSES
3—Valley Voith Screw Presses Size 2A, with new spare sets of plates.

SHEETERS
1—Hamblet 130" heavy duty—with 12 roll back-stand and lay-boy.
2—Hamblet 81" Single Knife with 6 roll back stands and motors.
1—Hamblet 81" Single Knife with 6 roll back stand and motor.
1—Hamblet 100" duplex with 4 pile Erie Layboy.

SHREDDERS
3—Sprout Waldron Cutters — type F-11 — 30" knives. Used 30 days.

SLITTERS AND WINDERS
1—40" Kidder Slitter and Rewinder.
3—Pusey & Jones 100" high speed slitters and rewinders.
1—Cameron 36"—Model 6.
1—Cameron 82" type 6 Model 5A with friction tension.
1—Hamblet 81" Single Knife with 6 roll back stand and motor.
1—Cameron 60"—Model 6.

STUFF PUMPS
1—Beloit 10 x 20 triplex—with motors and chain drives.
1—Sharple 7 x 10 Triplex.

SUCTION COUCH ROLLS
1—Millspaugh 22" diameter x 138¾" suction face.
1—Millspaugh 22" diameter x 150" drilled face.

SUPER CALENDERS
1—9 roll 120" face.
1—9 roll 82" face.
5—7 roll 82" face.
1—7 roll 85" face.
1—7 roll 50" face.

TRIMMERS
1—50" Undercut Trimmer.
1—40" Dexter.
1—Bayhold 84" with motors.

VACUUM PUMPS
1— 4 Nash Hytor.
2—Nash—#2H.
1—Nash L2.

AMERICA'S LARGEST BUYERS OF PAPER MAKING MACHINERY

FOR SALE

BEATERS
1—Iron tub 84x84 Shartle breaker
1—Dilts high speed with roll 56x48

CUTTERS
1—130" Morse duplex with duplex layboy
1—100" Hamblet duplex with duplex layboy
1— 94" Clark single with layboy
1— 84" Clark single with layboy
1— 70" Clark
2— 49" Hamblet

DRYERS

1—12 ft. x 186" Yankee	4—48 118"
1—12 ft. x 130" Yankee	2—48 x 106"
2— 8 ft. x 174" Yankee	1—48 x 80"
3— 5 ft x 174"	16—36 x 65"

FOURDRINIER PARTS
1—Wire 50' x 110" anti friction with 18" suction couch and three sets presses, rolls 20 x 108".
1—100" Fourdrinier Part with 30" suction couch, 20" diameter breast roll, 8" diameter table rolls.

JORDANS
1—No. 2 Appleton, anti friction, with 150 HP motor
1—No. 5 Miami, anti friction
1—No. 2 Dillen
3—Noble & Wood Peay

MOULDS
1—36 x 125"
1—60 x 84"
1—40 x 84"
1—36 x 84"

PAPER MACHINE
1—108" trim combination machine
1—84" trim facial tissue and M G machine with 8" dia. Beloit dryer
1—84" Fourdrinier paper machine

PUMPS
2—12 x 12 Gould triplex
1—10 x 20 Shartle duplex
1— 7 x 10 Gould triplex

SCREENS
2—No. 3 Bird
Flat screens, 3 to 10 plate
Leith Walk and Moore & White rotary

SLITTERS
1—234" Rice Barton
1—150" Moore & White four drum
1—154" Warren two drum
1—130" and one 120" Pusey & Jones two drum
1—112" Kidder
1— 62" Langston
1— 54" Cameron
1— 52" 44 W Cameron

SUCTION ROLLS
1—30 x 100" Couch
1—22 x 180" Press
1—25 x 186" Couch
1—18 x 146" Couch
1—18 x 92" Couch

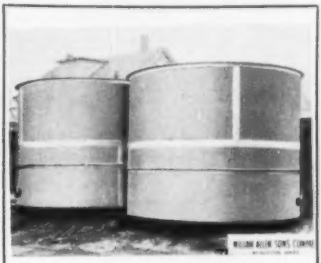
ELECTRIC TRUCKS
1—Baker electric truck, model D T O
1—Walker electric highway truck, 4000 lb. Capacity, Model 42 with generator
1—Automatic tractor and piler

FRANK H. DAVIS CO. 175 Richdale Ave., Cambridge, Mass. TF

1—55" Beck Sheeter with Differential Cut-to-Register attachment, GE Electric Eye and Sheet Piler. Heavy Duty Backstands. New Equipment.
1—New 24" Model X Schultz Automatic Roll Winding Machine. For Paper, Foil and Acetate Film.
1—Weber Cellophane Bag Machine—Model 2CN-247—With Motor Equipment.
1—Brand new 30" Hudson-Sharp No. FE-10 Roller Bearing Embossing Machine, late type, Linen Design Rolls.
1—50" Camachine. Type 24—Model 7A, with 20 sets of cutters. As good as new.
1—52" Universal Type 8, Model 5 Camachine. Reconditioned.
1—48" Inman Board Slitter and Rewinder. Rewinds 48" diameter rolls.
1—48" Langston, two shaft Slitter and Rewinder.
1—42" Type 6, Model 1A Camachine with 20 sets of slitters.
1—32" Johnstone TWELVE Slitter and Rewinder with sufficient knives to slit 1/4". Score cut. Excellent condition.
Power Paper Cutters: 4 Seybold: 40"—10Z, 54" 20th Century, 54" Holyoke and 56" Dayton, 6 Oswego: 34", 38", 44", 50", 57" and 74", 2 Acme: 32" and 42", 1 White: 44". 1 Dexter: 50". 1 S&W Undercut 63".
1—76" Hamblet Roller Bearing Duplex Rotary Sheet Cutter with Slitting Attachment, Maxson Overlapping Delivery. Hamblet Duplex Layboy for 2 piles and tenroll double-deck backstands.
1—96" Clark Aiken anti-friction bearing Single Rotary Sheet Cutter with slitting attachment. Moore & White 5 partition Layboy and 6 roll double-deck backstands. Excellent condition.
1—Erie Layboy, size 85" x 45".
1—53" Hamblet Single Rotary Sheet Cutter.
1—74" Norwood 9 roll stack of Super Calenders. Complete with DC Motor equipment.
1—96" Moore & White Sheeter with layboy.
1—104" Moore & White sheeter with layboy and six roll backstands.
1—54" and 1—52" Holyoke 9 roll stack of Super calenders. With drive, unwind stand and revolving reel rewind.
1—Jones Standard Jordan. Practically new. Split 7/8" filling for plug and shell. Direct connected to 75 HP standard AC motor.
2—#2 Emerson Jordans. Shell fillings 7/8" steel. Plug fillings 7/8" steel. Direct connected to 50 HP Westinghouse AC motors.
1—31" Embossing Machine; 3 designs—Cobweb, Diamond and Line.
1—Noble & Wood Mammoth Jr. Jordan direct connected to a 150 HP, Type H.R., 440 volt, 3 phase, 60 cycle 400 R.P.M., with 5 KW exciter, Westinghouse synchronous motor.
1—S&S Complete Toilet Core Making Equipment. Consisting of Reel, Glue Pot, Single Belt Tube Winder, Automatic Cut-off Saw and Tube Recutter.
2—81" Dietz Toilet Paper Perforators. Sheets 4 1/2 x 4 1/2 and 4 1/2 x 3 and paper towels perforated 7 1/2" and 13 1/2".
1—#41 TA Hudson Sharp Toilet Tissue Interfolder with #29E embossing attachment, takes 40 1/2" wide sheet. Length of cut-off—5 3/4". In good operating condition.
1—65" Squeeze Roll Waxing Machine.
1—63" Dietz Heavy Type Friction Rewind Toilet and Towel Machine. 4 1/2" x 5" Toilet and 7 1/2", 13 1/2" and 15" Towels.

GIBBS - BROWER COMPANY, INC.
21 East 40th St., New York 16, N. Y. J-6

FOR SALE



FOR SALE
Immediate Delivery

Two 6700 gallon Stainless Steel Storage Tanks
11'-6" diameter by 8'-8" high
1/4" thick Type 304 Stainless Steel shell and flat head
2'-6" flange nozzles in shell
4" and 6" couplings in bottom.

Subject to prior sale

William Allen Son's Co.
Worcester, Mass. Tel 5-8666

FOR SALE

Paper Power Cutters; Slitters & Rewinders; Die Cutters; Printers; Scorers & Creasers; Gluers & Wrappers; Coaters; Laminators; Waxers; Stitchers; Brightwoods.

Write for latest bulletin listing available paper box & paper converting machinery. Get on our permanent mailing list for up-to-date inventory.

SOUTH WABASH ENGINEERING CO.
2929 So. Wabash Ave.
Chicago 16, Ill. TF

PAPER COATING MACHINERY—Waxing, Oiling, Carbon, Laboratory Coating and Treating Machines. New improvement. MAYER MACHINE COMPANY, Inc., 1313 Buffalo Road, Rochester, 11, N. Y. TF

FOR SALE

FOR SALE

1—96" Cameron slitter and rewinder—type 18—100" drums—new machine (never used)—including type "C" constant web tension mill roll unit—rewind capacity 72" diameter.

J. J. ROSS COMPANY
250 Frelinghuysen Avenue,
Newark 5, N. J.
Bigelow 3-3720

J-6

FOR SALE

1—64" Waldron coating machine—including winder, festoon drier equipment and new Ross drier.
1—54"—Waldron wall paper type coater—including winders and festooning equipment—six color machine.
1—50"—Groehl and Hoelz brush type coater—including re-winder and festooning equipment.
1—54"—Textile Machinery Co. 7-roll Super Calender—roller bearings top and bottom.

J. J. Ross Company
250 Frelinghuysen Avenue, Newark 5
New Jersey
Bigelow 3-3720

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FOR SALE

300 Ton Hydraulic Press—for overissue news—30 x 40" platen—48" daylight—48" travel per minute—2 rams.

G. P. MACHINE SPECIALTIES
195-14 47th Ave., Flushing, L. I.
Telephone Flushing 7-9284 J-27

FOR SALE—1—250 HP, 2300 volt, 3 phase, 60 cycle, 257 RPM, 65.5 amperes, Type TS, 50° C Cont., Frame 6334Y, Form A Synchronous Serial #5434434, standard enclosure General Electric Motor. Rotor can be mounted on any shaft but pedestal bearings and base would have to be provided. Stator just rewound with factory coils. Field excellent shape. We have base, bearings, etc. for Chipper Drive—or possibly V-Pulley could be placed for V-Belt driving some other equipment. Address Box 49-2 care Paper Trade Journal. J-6

FOR SALE—1—CR7890-Y1, 250 HP, 65.5 amperes, 2300 volt, cat. #5365161 General Electric Synchronous Motor Controller with AC and DC ammeter, field switch, field application relay, etc. Address Box 49-3 care Paper Trade Journal. J-6

MOORHEAD ELECTRICAL MACHINERY CO.

PITTSBURGH 19, PA.

M-G SETS—ROTARIES (3 ph. 60 cy.)

500 KW Genl. Elec. Syn. 250 v. 2200/3/60 with panels. Can be used for 125 volts also.
300 KW G.E. Rotary 275 v.—3—110 KVA 2300/4000 v. Trans.
100 KW 125 v. West. SK—150 HP 220/440/1200 RPM Ind. Motor.
75 KW West. 75 v.—220/440 v.
80 KW 125 v. G.E.—75 HP G.E. 2200 v.
40 KW West. SK 250 v.—60 HP G.E. KT
35 KW G.E. 125 v.—50 HP 220/440 v.
15 KW Wotten 125 v.—25 HP Wotten 220
10 KW Bardco 125 v.—15 HP Master 220/440
2-7½ KW West. 35 v. DC—15 HP West. SK 230 v.

A.C. & D.C. GENERATORS

1000 amp. 60 volt Westgh. SK Welding Gen.
1—150 KW West. SK 125 v. 1200 RPM.
300 KW West. SK 250 v. 1200 RPM.
125 KVA 230/3/60 277 RPM West.
150 KW Triumph 250 v. cp.wd. 600 RPM.
150 KW G.E. 550 v. 1100 RPM cp.wd.
1500 amp. 60 v. West. SK Generator

AIR COMPRESSORS

1100 cu. ft. 100# Ibs. Chg. Pneu. 2 stage, 19" & 11" x 12" with intercooler, aftercooler, unloader, air receiver dir. con. 215 HP West. Syn. Motor 2300 v. 3 ph. 60 cy. 257 RPM with belted 8 KW SK West. exciter and manually operated starting panel. Good condition. Immediate shipment.
755 CFM Chic. Pneu. two stage Belted.
355 cfm 100# Chic. Pneu. 12 x 10 Belted.
270 cfm 100# Chg. Pne. Gas. Portable.
245 cu. ft. Ing. Rand belted ER1
220 cfm 100# Ing. Rd. Gas. Portable.
175 cu. ft. 100# pres. Chic. Pneu. 9x8.
1—164 cu. ft. Ch. Pneu. Steam Type.

REDUCTION UNITS

500/700 HP Morse Chain Drive—4.28 to 1.
150 HP Nuttall 1.6 to 1.

AC MOTORS (3 ph. 60 cy.)

HP	Make	Wdg	Spd.	Type
500	Elec. Mcry. Syn.		120	
300	G.E.	S.R	450	I M
300	G.E.	S.R.	600	I M
300	West.	S.R.	600	CW
150	G.E.	Syn.	600	ATI
125	West.	Syn.	277	
120	Cr.Wh.	S.R.	290	
100	G.E.	S.R.	450	IM
100	Al.Ch.	S.R.	580	
75	West.	S.C.	860	CS746
75	G.E.	S.R.	600	I M
50	Vert. G.E.	S.C.	1150	KT536
50	G. E.	S.R	860	I M
50	G.E.	S.C.	865	I K
50	G.E	Sl. rg.	908	I-11
50	West.	S.R.	585	CW658D
50	A.C.	S.C.	1750	
40	G.E.	S.C.	860	KT
35	G.E.	S.C.	1150	I K
30	Vert. G.E.	S.C.	1150	KT526
25	C.Wh.	S.C.	600	SC504
25	500 v. West.	S.C.	1750	CS365
25	Cr.Wh.	S.C.	865	
25	Cr.Wh.	S.R.	580	1210
15	West.	S.C.	1750	CS326
15	L.A.	S.C.	3600	Fr.324
15(2)	G.E.	S.C.	1150	KT
10	West.	S.C.	870	CS866C
10	West.	S.C.	870	CS464C
10(6)	West.	S.C.	1200	CS370C
7½	G.E.	S.C.	1700	FT944
7½	Comm.	S.C.	865	P326
7½	West.	S.C.	3440	CS254Y
5	West.	S.C.	585	CS546
5	West.	S.C.	1750	254
5(2)	West.	S.C.	1200	CS
5/1½	L.A.	S.C.	500/1600	2555
5	Master	S.C.	1125/37	PA
5	Burke	S.C.	420	EM2
3	West.	S.C.	1100	CS
3	West.	S.C.	1750	
2	West.	S.C.	600/1200	CS324
2	550v. West.	S.C.	1750	CS224
2	Imp.	S.C.	430	
30	G.E.	S.C.	1200	KG 405
40	West. 2200 v.	S.C.	900	CS

D. C. MOTORS

HP	Make	Voltage	Wdg.	Speed
375	West.	230	sh.	430/860
200	G.E.	550	cp.	875
200	West.	230	SK	400/800
150	West.	230	SK	400/800
125	West. S.K.	230	sh.	400/1200
60	Rel.	230	cp.	800/1200
50	G.E.	230	sh.	250/1000
50	Northern	230	ser.	600
50	Rel. 185T	230	sh.	1300
50	West. SK	230	sh.	1750
40	G.E. (Vert.)	230	cp.	1750
40	Roth 126 RS	230	cp.	1700
40	W.E.	230	cp.	750
40	G.E. CD	230	sh.	1750
20	Cr.Wh.	230	sh.	1150/1750
20	West. SK	230	cp.	1750
15	West. SK93	230	sh.	825
15	West. S5	230	cp.	1000
15(4)	Cr. Wh.	230	sh.	1460/1780
15	West.	230	cp.	750
13	West. SK113	230	Rec. cp.	830
10	West. SK63	230	sh.	1150
10	G.E.	230	cp.	1750
10	G.E.	230	sh.	1150
10	West. S.K.	230	sh.	730/1460
7½(2)	Al.Ch.	230	sh.	350/1050

NEW DC MAGNETIC MOTOR STARTERS

3-10 HP 230 V. with dynamic braking.
1-25 HP 230 V. C-H Dripproof.
1-50 HP 230 V. C.H. Dripproof
3-40 HP 230 V. C.H. Dripproof
5-60 HP 230 V. C.H. Dripproof
5-80 HP 230 V. W. Leonard Dripproof
4-60 HP 115 V. W. Leonard Dripproof.
5-75 HP 230 V. C.H. Dripproof.
1-100 HP 230 V. C.H. Dripproof.
150 HP Cutler Hammer 230 V. Mag. Control.

AC MAGNETIC STARTERS (3 ph. 60 cy.)

2—700 HP West. 2300 v. Syn. Line Starters.

MONORAIL HOISTS

5½ Ton Conco Hoist 220/3/60
1 Ton Shepard Niles 230 v. DC
1 Ton Shepard Niles 115 v. DC, M.D. trolley
2 Ton Shepard Niles 230 v. DC M.D. trolley
4 Ton Brown Hoist 230 v.
5 Ton Shepard Niles Hoist, 230 v. 2 motor driven trolley

Electrical Engineers—Specializing in *Rebuilt Electrical Machinery* for over a Quarter of a Century

— FOR SALE —

1—Pusey and Jones Fourdrinier Wet-End, wire, 133" x 61'-2". Breast roll, anti-friction. Shake, 30 table rolls, 5 suction boxes, 29" Sandusky Suction Couch roll.

1—Sandusky Suction Shell for primary press. 22" diam. x 138" drilled face.

34 Dryers, Moore and White, 126" x 48". Bearings, Sheehan rope sheaves, Pusey and Jones Packing Glands.

1—Bird Save-all, 43 x 127, metal vat, rubber couch, anti-friction bearings.

Calender Frames. 2 Sets. Heavy Duty. 9 rolls. With Bearings.

Calender Stack. 1—Beloit, 9 roll. 106". 20" bottom roll, 15" top roll, 9½ to 12", intermediate rolls.

Calendar Rolls. 3—10" x 124".
2—16" x 124".

2—Cylinder Moulds. 36 x 84".

2—Decker-Washers. 117 x 48. Anti-friction bearings. Woods Thickeners. Deckers do not use couch rolls. 3 HP gear-motors used for drive.

Drives—10—Moore and White. Double Reduction Mortise Gear Type, with cone pulley, clutch, two pinions. All from one machine. 4—Beloit—Single reduction units. Cone-pulleys, clutches, ratios, 4:1, 6:1.

2—Dryers, 42 x 190. Built for 100 lb. steam pressure.

3—Dryers, 36 x 92. Downingtown.

GEARS—15—36" dryers. 3½F, 108T, 6¾B, 42½PD, 1¼P, 4" thru hub.
12—for 48" dryers. 113T, 4P, 6"B, 1⅛"P, 54"PD.
15—for 36" dryers. 82T, 3"P, 7¾"B, 38¾"P.D., 1½"P., 4" thru hub.

1—Haug Refiner, Size 3, Type 3, Anti-friction Bearings. New in 1943.

INDENTING ROLLS—1—10" x 71¼". Frames, bearings, half-coupling.

INDUSTRIAL VACUUM CLEANERS.—7—1 HP, Arco Wand, Portable, Heavy duty, 6" vacuum, guaranteed same as new. All accessories. Hose.

JORDANS—1—Mammoth D Jordan, Noble and Wood. ⅛" filling, steel, direct drive.

1—Monarch Jordan. ¼" greylock filling. Extra set new filling. Belt driven.

PRESS ROLLS—1—Stonite roll. 162 x 24. ⅛" covering. Journals, 22 x 7⅛.
2—158½ x 25½" rubber press rolls. ⅜" rubber. 20 x 7 journals.
6—162 x 25½ rubber press rolls. ½" to 1" rubber. Journals, 17 to 22" x 7" to 9" diam.

PUMPS—2—Gould Stock Pumps, Type 3105, 12" suction, 8" discharge, anti-friction bearings, bronze trim, split casing, d.c., to 50 HP splash-proof motors, 440/220/60/3, 1160 rpm.
2—Bagley-Sewall Fan Pumps, Belt Driven, 9" discharge.
1—Lawrence Stock Pump, 4" x 6". Belt Driven.
1—Lawrence Stock Pump. 8" x 10". Belt Driven.
1—Shartle Single Plunger Pump. 12 x 20.
1—Beloit Duplex Plunger Pump, 10 x 20.
1—Beloit Triplex Pump. 10" x 20". New in 1941.
1—Shartle Triplex Pump. 10 x 20.

RADIAL DRILL—1—Hilbert Machine Co., 3' plain radial drill.

Screen—1—10 Plate Appleton Screen. Roller shoes. 5 HP gearhead motor. 440/60/3.

SUCTION COUCH ROLL—1—81" drilled face, Sandusky, 14¼" diam. Bearings and gear. ¼" shell. 88" over-all.

1—Synchronous Motor.—1—200 HP GE 2300 volts, Outboard bearing. 60/3. 257 rpm.
1—200 HP GE, Type I, Induction, Form K, 440/60/3, 900 rpm. Guaranteed.

TABLE ROLLS. 20—5" x 123" brass.
Suction Box. 1—167", bronze.

1—Turbo-Generator Set. GE. 375 KVA, 480 volts, 60 cycle, 3 phase, 80% P.F., with 300 KW Curtiss Steam Turbine, 175 lb. steam press., 10 lb. bleed-off, first stage. All switch-board, condenser.

VOITH INLET—1—for 119¼" wire. Complete with motor. Bronze distributing roll. Rubber lined mixing box.

WESTINGHOUSE FREQUENCY CHANGER—1250 KVA, 25 cycle to 60 cycle. 1580 HP Synchronous Motor, West. AC Gener. 2300 volts, 60/3, 300 rpm.

PAPER MILL STORES

P. O. BOX 40 • PHONE 3694-J • LOCKPORT, NEW YORK

FOR SALE

FOR SALE

1—102" Cameron Slitter and Winder Type 18. 100" drum. Rewind capacity 60" diameter.

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250 Frelinghuysen Ave., Newark 5, N.J.
Tel. Bigelow 3-3720
J-6

FOR SALE—500' Baldwin #660 chain with K-2 attachments on 6" centers, new in original case. Address Box 49-11 care Paper Trade Journal. J-6

FOR SALE—1—16 lb. and 1—20 lb. Parrish S.O.S. Bag Machine. Perfect running condition. Address Box 49-12 care Paper Trade Journal. J-6

WANTED

WANTED
Titaniums—Glycols
Alkalies—Waxes—Solvents
Colors—Oils—Residues, etc.
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WANTED

150" trim high-speed Winder with slitter attachment. Drive to be on right-hand side viewed from front of machine. Must be in good condition. Principals only. Address Box 48-784, care Paper Trade Journal.
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WANTED—Brightwood Box Machine. Address Box 48-224 care Paper Trade Journal TF

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CAUSTIC SODA
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Top prices paid
Also other chemicals, dyes
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Phone: Beekman 3-5894 J-6

WANTED—W & P Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic Presses, Sheridan Presses, Dryers. Address Box 48-223 care Paper Trade Journal TF

WANTED—1 synchronous motor, 200 H.P. to 450 H.P., 440 volt, 3 phase, 60 cycle, with starting equipment and controls. Address Box 48-803 care Paper Trade Journal. J-6

WANTED TO BUY—A Bauer-McNett Fiber Classifier. Contact: R. Aument, American Box Board Co., Grand Rapids, Michigan. Telephone 94581. J-27

WANTED—Source of supply on cheap grade No. 2 10# White Tissue, rolls give machine trim 80 to 84 inches large diameter. Carload business. Address Box 49-5 care Paper Trade Journal. J-6

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TRADE-MARK
POSITIVE
Reg. U. S. Pat. Off.
High Speed Disc Refiner
THE BAHR BROTHERS MFG. CO.
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ROTARY FOLDERS
Paper Towel — Facial Tissue — Wax Paper
Toilet Tissue — Paper Napkin — Paper Table Cover

WINDERS
Paper Towel — Drum Winders — Jumbo Roll
Toilet Tissue — Crepe Paper — Friction Winders

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Glassine — Tissue — Name
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Adjustable — Tissue — Napkin — Multi-Wall Bag

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Seal Cover Machines — Web Die Inkers
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Collapsible Reels — Cellulose Laminating Machines

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Write for complete details on any machine in which you may be interested.

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BATCH REFINING

NOW: FOUR SIZES

No. 0, No. 1, No. 2, No. 3

ALSO: TAPPI STANDARD PULP TESTING, SHEET MAKING APPARATUS

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WILLIAMS PRECISION FREENESS TESTER

The Most Accurate Freeness Tester Ever Built

Operates on the Only Correct Principle of Freeness Testing.
Automatic Timing with Electric Stop Clock which Measures Drainage Rate through a Wire, same as on Paper Machine.

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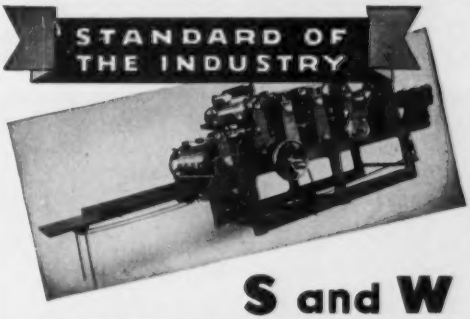

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For the bag industry — for increased production and lower costs. S & W Bottomers and Multi-wall Tubers for pasted and sewed bags increase production, reduce spoilage and lower unit costs. New exclusive, time-saving features make these top production machines highly desirable in the modern plant.

Smith & Winchester specializes in custom-built production equipment to meet the specific needs of the paper and paper bag industry. Inquiries are solicited.

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SOUTH WINDHAM, CONNECTICUT

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RECORD PAPER & PULP STOCK VALVES "BONNETLESS SELF CLEARING" - - - "RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M. all iron, bronze or stainless steels, body parts plain or rubber lined.

The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

- The "FAST THREADED" screw stem and ball bearing speeds valve operation.
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- The yoke mountings are such that yokes for various methods of gate operation are interchangeable.
- Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

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LIVERMORE FALLS, MAINE, U. S. A.

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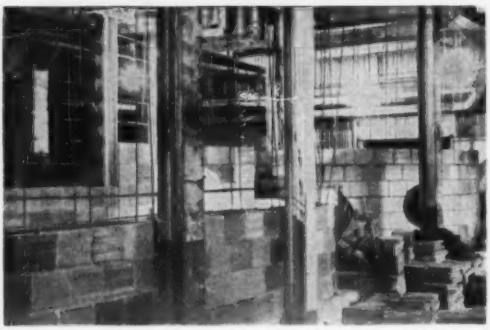
THOMAS PAPER STOCK COMPANY
860 W. Evergreen Avenue • Chicago 22, Ill.

3 New Stock Chests



Another **USE** *for*
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Showing a machine chest — refined stock chest and raw stock chest, all being built of Kalamazoo Glazed Tile.

Kalamazoo tile is ideally adaptable to all three types of chests due to extreme strength, the easy-to-keep clean surface and low maintenance costs.

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KALAMAZOO 16 MICHIGAN

H. WATERBURY & SONS CO.
ORISKANY, N. Y.

Manufacturers of
WATERBURY FELTS
Since 1860

WEIGHING while conveying with the WEIGHTOMETER
Wood Chips, Salt Cake, Sulphur, Coal, Etc.
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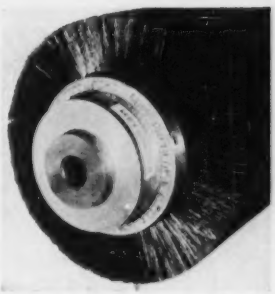

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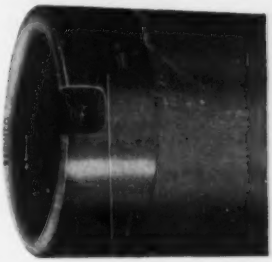

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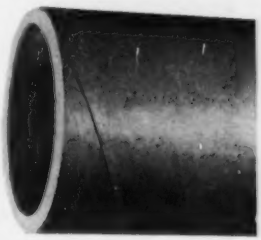

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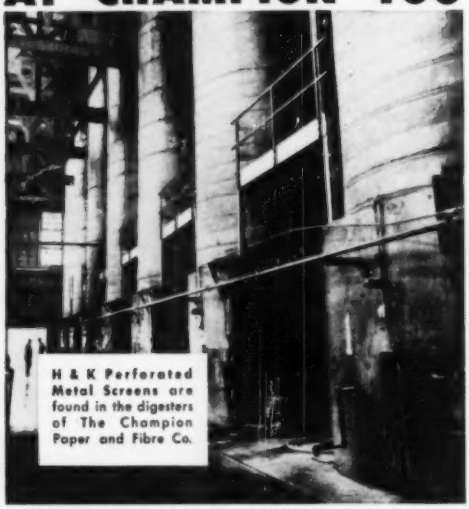

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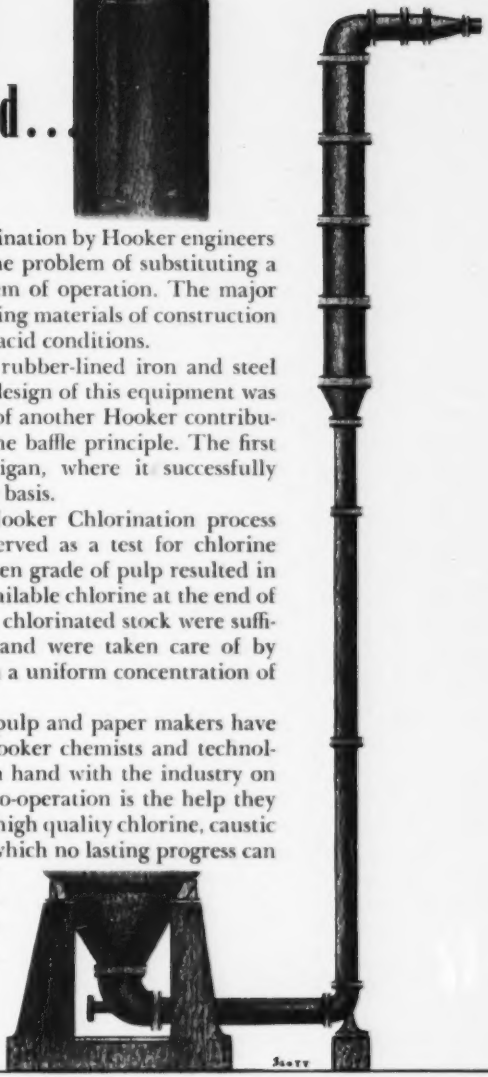

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- 2 bearings on 32" bottom roll.

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